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APRIL, 1916.

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A QUARTERLY REVIEW
OF
PSYCHOLOGY AND PHILOSOPHY.
EDITED BY

PROF. G. F. STOUT,

WITH THE CO-OPERATION OF PROFESSOR E. B. TITCHENER, AMERICAN EDITORIAL REPRESENTATIVE, AND OF PROFESSOR WARD, PROFESSOR PRINGLE-PATTISON, DAVID MORRISON, M.A., AND OTHER MEMBERS OF AN ADVISORY COMMITTEE.

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NEW SERIES. NO. 98.]

[APRIL, 1916.

MIND
A QUARTERLY REVIEW
OF
PSYCHOLOGY AND PHILOSOPHY

I.—THE PLOT OF PLATO'S *REPUBLIC*.

(Continued from page 82.)

BY P. S. BURRELL.

IV.

THE next part of the dialogue of which the dramatic value is to be determined, together with its importance in the evolution of the plot, is the restatement of the moral problem by Glaucon and Adeimantus at the beginning of Book II. According to the usual method, by which critics are wiser about the composition of literary works than their authors themselves, and in accordance with the common disinclination to believe that Plato means what he says, the usual 'first division,' as Jowett calls it, of the *Republic* is placed at 369 B. The reason for putting the break there is apparently because Socrates begins at that point what is called the constructive or dogmatic part of the dialogue by describing the development of the ideal State, in which justice is to be sought and discovered. This, however, is to defy Plato, who deliberately puts the break at the end of Book I., which he calls the "prelude".

If we try to follow Plato's guidance in regard to the articulation of the plot, we cannot help seeing that the end of Book I. marks the real division. In that book, as in a prologue to a play, warring opinions and principles make their appearance, and have so to speak a preliminary skirmish; and thus the reader acquires a certain familiarity with and interest in the problems which must be faced before they can be settled. But it serves another purpose also, namely that of showing, according to true Socratic principles, that

the only path to knowledge is the consciousness of ignorance. Polemarchus is honest enough to confess his ignorance ; Thrasymachus, beaten at every passage of arms, is clearly in the same mental condition, though he is too proud to confess it, and finally, Socrates, who has been victorious all along the line, with a superb irony acknowledges his own ignorance also, especially about the vital matter of the definition of justice. "For when I do not know what justice is," he says, "I am hardly likely to know whether it be a virtue or not or whether he that possesses it is happy or unhappy." Socrates cannot be satisfied with a debate which has been largely polemical and directed chiefly against inadequate or erroneous theories, and he reminds the company that the problem cannot be really tackled until they get back to their original question, "What is justice?" It will not do, he seems to say, to be driving at practice too soon, and rush off too soon to discuss the relative advantages and disadvantages of justice and injustice. On the contrary, the theoretical inquiry is the indispensable preliminary, without which the other dishes, in Plato's phrase, will not satisfy at the feast of reason. And yet again the theoretical question is much more likely to be tackled in real earnest, when the supreme practical importance of the matter is realised. This essential connexion between theory and practice, of which no one was more conscious than Socrates and Plato, is brought out in the first part of Book II.

It is in the light, therefore, of the instructive preliminary discussion that Glaucon and Adeimantus restate the moral problem and do so as vehemently as they can. In Gomperz's phrase, "they give it exact formulation". They gather up the threads of the previous discussion, formulate the case for injustice, more brilliantly, surely, than it has ever been set forth before or since, and thus give Socrates the task of overthrowing the most extreme position which it is possible to take up. In their hands, the problem becomes a universal issue, no longer a mere theme for dialectical argument or eristic debate. It becomes a problem which every man must face for himself—a choice between good and evil. The choice was difficult just because the struggle was so real, because evil was definitely held up as a good, as an ideal, by the sophists. When this point is grasped, it is difficult to understand Gomperz's view of the portraiture of Thrasymachus, especially as it is inconsistent with his correct recognition of the formulation of the sophistic position by Glaucon and Adeimantus.

"It is impossible," he writes, "that a man who followed the calling of an orator in a democratically ordered commonwealth and who de-

pended on the favour of public opinion, should ever have spoken in such a tone about tyranny or the overthrow of the rule of law." . . . "The causes of Plato's bitterness are a secret we cannot penetrate." The chief point is this : Plato needed a foil for the doctrine enounced by Socrates and thought himself at liberty to put forward the rhetorician in question to combat the main thesis of the *Republic*, "justice makes the just man happy".¹

One might as well explain the Pharisees as a necessary foil to "the voice crying in the wilderness"! When it is remembered that similar cynicism is combated in the *Gorgias*, and that Athens had herself practised the sophistic doctrine in her treatment of Melos, it seems to be as clear as daylight that Plato was not amusing himself by constructing an imaginary foil for Socrates, but that justice was in real distress, and that Socrates was doing his best to come to its rescue.

But to pass on. It has been said that the dramatic element in the *Republic* diminishes as the dialogue proceeds. Mr. Lindsay, for instance, speaks of Books II.-IV. as "less dramatic" than Book I., "because we have in these books Plato's development of Socratic teaching".² The reason for making this allegation is presumably because the personal element, the characterisation, the little touches of time, place and demeanour, e.g., the ferocity, the blushing and the perspiration of Thrasymachus are wanting in these books. This may be so or not. But surely there is a deeper sense than this in which the dialogue can be dramatic. If Jowett means literally his remark that "nowhere else than in the *Republic* is there more dramatic power," he must mean drama in some profounder sense than either of the two ways in which Plato might be dramatic according to Mr. Lindsay, viz., (1) by showing "what Socrates was like, what he thought and how he taught,"³ i.e., giving a dramatic representation of "the historical Socrates," or (2) by expressing certain views of his own in contrast with other views and "putting them into the mouth of Socrates and his companions" after the manner of Berkeley or Hume.⁴ Mr. Lindsay says that Plato does neither the one nor the other. Here opinions may differ, for it could surely be hard to find the sophistic theory of morality stated with greater force, or a more vivid analysis of its effect on the young educated mind. Nor are the irony and the humour of Socrates, to some minds at least, less delicate and keen in the later books than in the first. But Mr. Lindsay says, "it becomes a dialogue which conveys only Plato's teaching". How then are we to reconcile the view that from Book II. to the end is

¹ *Greek Thinkers*, iii., 59.

² *Op. cit.*, p. xiv.

³ *Ibid.*, p. xii.

⁴ *Op. cit.*, p. xiii.

practically a dogmatic treatise with the view that the dialogue shows Plato's dramatic power at its highest?

The reconciliation is really a very simple matter. We have only to look on the *Republic* as a mime or drama "which holds the mirror up to nature," i.e., as a faithful reflexion of the moral consciousness and its problems, in the common-sense way, without any narrow preconceived views of the nature of dramatic dialogue. Surely the essence of drama is that, as Aristotle said long ago, it is a *μίμησις*, a representation or reflexion of human life, and the value of any particular dramatic piece consists just in the fidelity and accuracy of the picture, in its realism and close relation to human life. It is accordingly a representation of human action, of human happiness and unhappiness, to quote Aristotle again. Now the modern drama—that which is intended for acting on the stage—usually involves events, incidents and movement, belongs in fact to the temporal order. The characters, unlike the interlocutors in Platonic dialogues, do a good deal more than sit and talk. The same may be said in a lesser degree of the statuesque classical drama of antiquity. From this point of view the epithet 'dramatic' seems at first sight inappropriate to Books II.-X. But this is only a superficial view. In human life words mean ideas, and ideas mean action. Indeed words often *are* actions; and a dialogue may be expressive of the most intense moral action. For wills may struggle and conquer no less in debate than in outward conflict. This is especially true of a developed state of civilisation and was certainly true of Athens in Plato's age, where, as Nettleship has remarked, men were extraordinarily susceptible to the influence of words and ideas. They were, therefore, much more prone to suit the action to the word, to translate theory into practice, than the phlegmatic Teuton, for example, who can jog along quite comfortably with his creed and conduct apparently in open conflict. Hence also the importance of holding the right theory. Accordingly we observe that in Athenian drama in several plays the characters talk rather than act. Prometheus Vinctus talks all the time, chained in one position to a rock; and yet there is no lack of dramatic flavour in the play, because the warfare of wills between him and his tormentor is so intense. Similarly, in the *Oedipus Rex* the interest lies not so much in what the actors do, as in the discovery of what they have done, and in the effects thereby produced on their minds and conduct. Oedipus's weal or woe depends absolutely on what is said, provided it can be substantiated, depends in fact on the

truth of a particular theory, just as does the happiness or misery of the young man whose moral perplexity is so vividly portrayed by Adeimantus. It is in this sense that the *Republic* is dramatic. It represents the wrestle between the principles of good and evil, in which, to use Plato's figure, Socrates 'gets to grips' with injustice. No man was more intensely convinced than Plato of the power of ideas over action, of the causal connexion between creed and conduct, theory and practice, and consequently of the paramount importance of correct theory. It is a belief which underlies all the dialogues, and, as it happens, is expressed with great directness and force in the *Republic* itself, particularly in the section now under discussion (*vide e.g.*, pp. 344 E, 364-366, etc.). To quote only one passage: "Still, if we would be happy, this is the path we must follow. The tracks of the argument point this way" (p. 365).

The great difference between Plato and indeed Greek philosophy generally, and most modern moral philosophy, at any rate until recent times, is that it did regard philosophy as a serious practical matter and not merely as a curious speculation. Philosophy meant very definitely a way of life and not merely a speculative system. Hence all through there is the sense of an actual conflict of ideals, and from this point of view it took the place of religion. In contrast with this, most other moral philosophy has been more or less academic. Since the close of the classic Greek philosophy, and no doubt largely as the result of the influence of Christianity, there has been a pretty general agreement about the moral standard, the moral ideal. The differences have turned largely on the correct interpretation of the facts of the moral consciousness and the correct investigation of the origin of moral distinctions. That is perhaps why modern moral philosophy is so often flat and dull compared with other literature, so regularly untouched by emotion. But in Plato's day things were different. There was a real struggle between ideals—a real dispute as to the facts of the moral consciousness; a genuine doubt as to whether there was really and truly any such thing as morality, as commonly understood. Justice by no means always came off the conqueror in the popular estimation, as the actions of the *τύραννος πόλις*, and the atrocities of the Coreycean and other revolutions, showed in rather lurid colours. In such times, as Thucydides has pointed out, there occurred a very drastic 'transvaluation of values,' and moral qualities got called by quite other names. Justice and injustice, in fact, were contending with one another in the market-place, the law courts and the assembly.

Authorities differed profoundly not merely as to the right explanation of accepted moral judgments, but as to whether there was really such a thing as a moral judgment properly so called. The question was not, "This or that being accepted as good, on what hypothesis is it to be explained?" but "What *is* good?" "What do we really mean by good? Is it something forced upon us, which would never be spontaneously sought after," or "is it pure unadulterated selfishness, which we all naturally seek to satisfy?"¹ Is it the best thing for a man "to steal anything he wished from the very market-place with impunity, to enter men's houses and have intercourse with whom he would, to kill or set free whomsoever he pleased, in short to walk among men as a god?"² Or is it something quite different? It was because Plato and Socrates were face to face with such fundamental questions as these, and had to ask themselves, "What do we really mean by the best or divine life?" taking nothing for granted, that makes them so pre-eminent in moral philosophy. When you have not merely to justify a theory like a professor in his study, but to maintain a standard for your own sake and for humanity, you have to do the thing more earnestly, more realistically and with a deeper sense of responsibility. In other words you approach the subject as an interested partaker in the struggle, and as a possible victim, if you do not win.³ This at all events is the impression produced all through by the attitude of Socrates.

The drama in the *Republic*, then, is a representation of what goes on in man's soul—in Plato's own language—of what power the opposing principles of justice and injustice have in man's soul, "that makes the one in itself and for itself good and the other bad" (p. 367), and the interest lies in seeing which comes out on the top. He was not merely thinking of the facts and people of his own time, but he was trying to represent a struggle which is universal, and to find a solution which is universal. His work is essentially concerned with universal realities, the *εἶδος* of justice and injustice and their implicates. As such it is a drama, which is more philosophical and of "a higher seriousness" (*σπουδαιότερον*) than history or biographical portraiture, to which so many critics in their obsession for "the historical Socrates" have tried to reduce it. So much it was necessary to say on the dramatic form and value of the restatement of the

¹ Cf. *Rep.*, pp. 359, 360.

² *Repub.*, II., p. 360, Lindsay's Trans.

³ Similarly, it might be suggested that the reality and depth of Plato's logic and metaphysics are due to the fact that he had to find justification for the right to speak instead of merely pointing with or moving the finger, after the fashion of his early associate, the Heraclitean Cratylus.

problem by Glaucon and Adeimantus. Let us now consider the bearings of its content.

In the first place, it expresses the consciousness that the sophistic theory has not been well put and that, though it has been overthrown as represented in the version of Thrasymachus, it can be stated more forcibly and more systematically. Hence Socrates has only produced "the appearance of conviction" (p. 357). Thrasymachus is declared to have yielded sooner than he need. The suggestion seems to be that both sides to the debate must abandon the rôle of merely destructive criticism. If the struggle is to be fairly fought out to a finish, each side must produce a constructive theory, must start from positive principles, must produce an adequate *ὑπόθεσις*. Accordingly, Glaucon formulates systematically the sophistic doctrine of morals, by way of showing what is wanted. He "renews" the argument of Thrasymachus (p. 358), and thereby advances the development of the plot.

In the second place, it plainly indicates the direction in which the solution to the problem whether to be just or unjust is to be found, and thereby indicates the principle or *ὑπόθεσις* on which a true account of the matter must be based. It brings into emphatic prominence the conception of good, and makes it quite clear that the relation of justice to goodness must be settled, if the problem is to be adequately handled. Thus we have the classification of *good things*, the difference between what is freely chosen as *good*, and that which is adopted as forced upon a man against his will (*ως ἀναγκαῖον ἀλλ' οὐχ' ὡς ἀγαθόν*, p. 358), the question whether justice is *better* than injustice, the theory that "the satisfaction of *πλεονεξία* is the object which every creature naturally pursues as its good" (*ὁ πᾶσα φύσις διώκειν πέφυκεν ὡς ἀγαθόν*, p. 359), the need of showing what is the effect of justice and injustice on the soul, which makes the one *good* and the other evil. The whole section is, in fact, permeated with the idea of the good, and is devoted to expressing the *ἀπορία*,—which is fundamental to ethics—"What is the good by nature (*φύσει*) or in reality?" It crystallises that which underlay several of the arguments of the previous book, that the real object of inquiry was something good, or profitable, how to fare well, how to make the best of life. It seems to afford a convincing refutation of the doubts constantly expressed by the disintegrating critics as to the propriety of Books V.-VII. in a Dialogue on justice. In regard to those books Mr. Lindsay, for instance, writes: "We have now left the house of Polemarchus in the Peiraeus, and are at the Academy listening to Plato lecturing. Further these

books deal with subjects in which we know that Socrates had no interest."¹ Now there could hardly be a clearer illustration than that supplied by the beginning of Book II. of interest in the conception of the Good: and as it is admitted that "the arguments are still those which the historical Socrates might possibly have used,"² there seems to be some inconsistency in the critical view. This will be still more evident when we come to see that it is just this idea of good, which is brought to the front by Glaucon, and is the coping-stone of the later metaphysics, that forms the *ἀρχὴ* or *ὑπόθεσις* of Socrates' construction of the State. And surely, from a purely common-sense point of view, if you are going to discuss the question whether *justice is better* than, or better worth having than, *injustice*, there are at least four concepts and their relations to be criticised, *viz.*, (1) justice, (2) truth or reality ('is'), (3) goodness, (4) injustice. And curiously enough the discussion of them in the *Republic* follows exactly this order. Justice is the theme of Books II.-V. med.; truth or reality, and goodness, of Books V. med.-VII.; injustice of Books VIII. and IX. The question to be decided is, "What is the good of justice?" and Socrates remarks in so many words that the important thing is to teach the guardians how justice is good. As Mr. Bradley remarks in another connexion: "Any one who in philosophy asks such a question as 'What is the good of?' is obviously bound when challenged to state his answer to the inquiry, 'What is good?'"³ It is preposterous to suppose that a mind as acute as Plato's or Socrates' did not see this necessity, and it is therefore gratuitous to raise doubts about the claim of Books V.-VII. to form a necessary integral portion of the argument, to regard it in short as a Platonic after-thought pitchforked into a Socratic discussion. Thirdly, as has already been indicated, it gives a systematic statement of the cynical sophistic theory of morality, stripped of all veneer or disguise, and urges it as forcibly as it is possible to do. "I shall speak vehemently," says Glaucon, "in favour of the unjust life and in doing so I shall show you the way in which I want to hear you condemning injustice and praising justice" (p. 358). He will, in Plato's phrase, give Socrates a real 'grip' in the wrestle for morality. Hitherto there had been only skirmishing; the way is now prepared for a pitched battle. Fourthly, it anticipates and makes necessary the tactics which Socrates adopts later on. It may be taken as a sound principle of criticism in Plato

¹ *Op. cit.*, p. xii.

² *Ibid.*, p. xii.

³ *MIND*, N.S., xx., No. 79, "On Some Aspects of Truth".

that if Socrates' meaning or method is ever not quite clear, it can always be found by asking whether it is the opposite of a sophistic position. For Socrates invariably says the opposite of what is advanced by his adversaries. He was, in a sense, obliged to indulge in what his critics are pleased to call paradoxes; for he had to put one paradox against another, and the Sophists were masters of paradox. Thus in the *Gorgias* Callicles says it is better to injure than to be injured. Plato says exactly the contrary. In the *Theætetus* the sophistic view is that knowledge is sensation. Plato gives it a flat denial. In the *Gorgias* Callicles says philosophy is a graceful accomplishment in youth, but deserves a whipping in a grown man. Plato says it should be the serious occupation of a lifetime. The Sophist held that everything comes into and passes out of being. Plato replied that everything real exists always. The Sophist says no one will choose virtue for its own sake. Plato that no one wills to be bad for the sake of badness. Thus we may expect the arguments of both Sophists and Socrates to advance along parallel lines, being locked together in a wrestling grip. We find exactly the same thing in the *Republic*. Thus Glaucon gives an analysis of society; Socrates replies by a more profound analysis. Glaucon finds injustice the radical 'natural' principle of 'natural' society. Socrates shows that 'natural' society is founded on justice. Glaucon says that real human nature stripped of shams seeks to secure as much material good as possible for the individual at the expense of all others; seeks to make everything its own. Socrates maintains that real human nature in seeking its own good seeks also to get as much good as possible for all; and tries to make nothing its own. The Sophist, recognising no distinction between justice and injustice, holds that everybody in the pursuit of his own interest is naturally unjust: Socrates holds that every one, if he pursues his own interest, is naturally just. Similarly Glaucon's pictures of the just and the unjust man are answered in Books IV. and VIII. by Socrates' pictures of the same. Again, Adeimantus brings up the influence of education and public opinion: Socrates accordingly discusses them both. Adeimantus also shows how false religious views undermine morality: Socrates accordingly shows how true religious views provide a basis for moral education. Finally, the prejudice in favour of justice is ascribed to the fact that justice had not been disengaged from its consequences or irrelevant accompaniments, and had not been considered in itself. Socrates accordingly discusses justice in idea, and is

thereby forced to discuss the relations between knowledge and opinion, appearance and reality,—in short, the theory of ideas. Socrates, in fact, takes up the cue given him by Glaucon ("I shall show you the way in which I want to hear you condemning injustice and praising injustice"),¹ and responds to the challenge to show justice in and for itself, and how it is a good.

The necessity of considering justice and injustice in their most complete manifestation or development had been brought to light to some extent by the discussions of Book I. Thus Thrasymachus insists that his theory that justice is the interest of the stronger, *i.e.* the ruler, must only be considered to hold good on the assumption that the ruler is a ruler as such, who never mistakes, or, if he does, can always retrieve it by fighting down opposition or escaping detection (p. 345), and that his theory only applies if a tyrant, the 'superman' of antiquity, is taken as the type, not the kidnapper or the pickpocket. "For if you take the *most perfect* injustice, you will easily see that it makes the doer of injustice the happiest of men" (p. 344), and the most perfect type is the man who is able to aggrandise himself or overreach others on a large scale (p. 344), though it is admitted that the injustice of the pickpocket is also profitable, if it escapes detection. Still it is only those who commit "complete injustice" who are called happy or blessed. Nor does Socrates object to this principle of comparison. He is perfectly willing to think of the ruler *qua* ruler as infallible and of ruling as an art *qua* art as perfect, and he reproaches Thrasymachus for abandoning the ideal conceptions, when they got him into difficulties, in favour of commonplace notions. He is quite ready to argue whether perfect injustice is or is not more profitable than perfect justice, when the question is raised whether the one is virtue and wisdom and the other vice and ignorance. In this way, the path is prepared for considering justice in idea, alone by itself, in its essential nature, stripped of all consequences or extraneous accompaniments. The great desideratum at the end of Book I. was the definition of justice, the whole of justice and nothing but justice. And this is reiterated by Glaucon and Adeimantus in their re-statement of the problem. But then, at once, the thought occurs on reflexion that in actual experience this is precisely what you cannot do. Absolute justice, justice in its purity and perfection, never is actually an object of experience. Both just acts and unjust acts are always mixed up with irrelevant circumstances, and there is no action of which you can be quite sure that it is pure, unalloyed justice or

¹ *Republic*, p. 358.

injustice. Actual individual moral acts are in Plato's language "tumbling about between existence and non-existence". It would seem, therefore, a somewhat unpromising enterprise to fix and define "perfect, entire, extreme justice, absolutely in and by itself". It looks at first sight as if Glaucon invited Socrates to attempt the impossible.

But Glaucon indicates a way out of the difficulty; and he sets the example by appealing beyond experience. In his account of the nature and origin of justice his statement that the best thing according to nature is injustice (to injure) cannot be verified by ordinary experience, which *ex hypothesi* is based on the compromise called justice. He is founding therefore the Sophistic doctrine on an *idea* of what is best, not on empirical facts, and cannot therefore complain if Socrates does not appeal to actual experience either, but to its presuppositions. The theory of Glaucon then suggests that the matter must be discussed in the atmosphere of ideals, of what we believe human nature should be, if it were at its best, and were realising its true nature, and cannot be settled except by determination of what human nature or society would be if dominated by either of the principles in its perfection. Hence Glaucon wants to know "what each is and what power each has of itself when existing by itself in the soul" (p. 358), and states that it will be only possible to decide which confers the best life on its possessor "by contrasting the extremes of justice and injustice" (p. 360), and explains that in order to do so it is necessary to abstract nothing from the injustice of the unjust or from the justice of the just; "each must be assumed as perfect in his own way of life" (p. 360). In view of these quotations, it cannot be said that Plato does not prepare the way for, or surprises his readers with, the construction of a perfect State, completely dominated by a single principle.

Moreover, the restatement of the two brothers shows how the perfection of each type or ideal in his own particular line (*eis tò éautov̄ épitíðeum̄*) may be reached. Socrates, they say, must disregard consequences altogether, and thereby the motives and inducements which public opinion may supply for pursuing the one or avoiding the other. If justice is honoured or rewarded, you can never tell with absolute certainty whether just actions are really just, i.e., done purely for the sake of justice, or merely skilfully adapted means for attaining honours and rewards. Similarly, if injustice is dishonoured and punished, you can never tell whether a man avoids committing it because he hates injustice as such or is afraid of being whipped for it. You can never find what is

the nature and power of justice, unless you can realise the situation of a just man, who has no other reward but justice, *i.e.*, who cares for nothing but justice, and that of the unjust man, who cares for everything but justice. Otherwise, it is impossible to say which is really the object of desire, and why and what it is good for. Hence to find out which is really the object of choice, *i.e.*, which is the good, chosen for its own sake, it is necessary, suggests Glaucon, to strip each of its consequences and regard every man as possessed of the ring of Gyges, following absolutely his own unfettered choice, so that what he chooses, he chooses *ἐκῶν ὡς ἀγαθὸν* not *ἄκων ὡς ἀναγκαῖον*.¹ Clearly, therefore, actual experience is not the final court of appeal, if the decision is to turn on an imaginary case, for the case can never be brought to a practical test. Neither can it be settled by individual psychological introspection, for every individual in matters of introspection claims to be the final judge of the evidence of his own consciousness. The application of the story of the ring by Glaucon amounts to an assertion of what would happen if such and such conditions were realised. It is a judgment on human motives, and can only be verified by a psychology—by an examination of human nature—which both parties to the arguments would accept as true. The problem is to find a point of agreement, an *ἀρχὴν* or *ὑπόθεσις*, which will be acknowledged both by Socrates and the Sophists. This, as we shall see, Socrates succeeds in doing, and it is on the strength of this that his victorious vindication of justice is based. For, both sides, starting from admissions, play the part of both jury and advocate, in the manner explained in Book I. As they agree in the beginning they can also agree at the end. Thus the content of Socrates' reasoning is inseparably bound up with its form.

Meanwhile, starting with the principle accepted by both sides that the fundamental object of human desire is to get as much good as possible, Socrates shows what must happen if this principle is followed with absolute consistency and clear knowledge of the situation. The Sophistic examination of human nature takes too much for granted and begins too late. For the test implied in the possession of the ring of Gyges presupposes the beginning and development of human society. Society must first be in existence and in a fairly advanced state before the possessor of the ring can plunder or abstain from plundering it. But no analysis of human society can be complete or satisfactory which does not take account of its logical genesis

¹ Cf. *Republic*, pp. 359, 360.

or ultimate ground, or, in other words, reveal the ideas on which it is based. This is what Socrates means when later on in his reply he insists on beginning at the very beginning and ascertaining the presuppositions of human society. He asks, in short, what makes human society possible; to what principle does it owe its existence. The problem, in short, is what really is human nature, and by what motives are men really determined to action? By merely prudential selfish motives? or by ideal motives as well? The only way of solving the problem is to discover the right method of finding out what human nature is. Here, as always, Socrates is the master of method. You cannot, he seems to say, find the answer to your questions by an arbitrary selection of social phenomena, which lend cover to your own theory, or by superficial and perhaps sophisticated introspection. You must undertake a thoroughgoing analysis of society as such, and strike right down to its foundations which every one, setting aside all preconceptions, cannot but acknowledge. It is this idea which accounts for the prominence given to the conception of *φύσις* all through Books II to IV. The Sophistic analysis starts with an antithesis between the individual and Society; but Socrates says implicitly that you must first have your individuals in society.

Again, Glaucon lays down that either type of character must be thoroughly efficient. The unjust man must be shrewd, courageous, eloquent, able to avoid detection, strong enough to over-master opposition, while the just man must never flinch in the face of the hardest trials. As the reasons which commonly deter people from injustice are the evil reputation and the punishment it incurs when detected, all these deterrents must be put aside. The unjust man must never have the reputation for injustice and by consequence always have the reputation for justice. Moreover, it follows that he must never be caught in his injustice: he can be absolutely unjust, and yet be thought absolutely just. On the other hand, as the desire for reward, etc., is said to be the motive for justice, these inducements must also be put aside in the case of the just man. He must be stripped of all appearance of justice and be reputed unjust. He must be left with nothing but justice. Thus only will these two come to the extremes of justice and injustice, and then only may we judge which of them is the happier (p. 561). Adeimantus also emphasises this procedure. "Abstract the reputation of each, as Glaucon urged. For unless you abstract from each his proper reputation and give it one

that does not belong to it, we shall say that you are praising not the reality but the appearance of justice and condemning not the reality but the appearance of injustice."¹ If justice, as Socrates and they agree, belongs to the class of "fairest goods," it is incumbent on Socrates "to show not only that justice is stronger than injustice, but to show precisely what effect each has in him who possesses it, that makes the one in and for itself good, and the other bad" (p. 367). If this is not done, they say, the problem is shirked, or given up, and it must mean that Socrates is content to praise only the appearance of justice, and advises that men should be unjust and not be found out, and agrees with Thrasymachus that justice is the good of another, the advantage of the stronger, and injustice is profitable to oneself, but disadvantageous to the weaker.

Finally, the restatement makes plain the real issue in morality. It emphasises the fact that morality or justice must be shown to be each man's own good, and not somebody else's, if it is to exercise any attraction on the motives of conduct. Every form of action must be shown to be profitable to each man himself, if it is to be choice-worthy. It is sometimes suggested that in Plato's ethics the individual is sacrificed to the State, or at any rate merged in or subordinated to it. Thus Dr. Strong writes:—

"As we look at the figure which his treatment suggests, it is impossible to deny that it loses character to our minds in two ways: (1) It is entirely social, and the individual element is practically ignored. . . . That is, the individual, as he is to have no happiness, would seem to have no existence apart from his State."²

It is quite true that Plato endeavours to make clear that the individual can have no real happiness apart from the State, that the interests of the two are absolutely identical. But the suggestion that the individual is sacrificed or ignored in any way is utterly groundless. It is not only inconsistent with the contrast between the two individuals—the perfectly just man and the perfectly unjust man—scoured, as Socrates says, like two statues. But it is inconsistent with the portrait of the just man in Book IV., to which the account of the State is preparatory, as well as with the conditions of the problem as set forth by Glaucon and Adeimantus, when they insist on the demonstration of the power of justice in the *individual* soul. All through the formulation of the problem in the beginning of Book II. the assumption is that justice must be shown to be a man's own good, something which he, the individual, would choose as the best thing for

¹ *Republic*, p. 367.

² *Platonism*, p. 191.

himself. Hence it is as a matter of individual choice that he presents the moral problem in Book II.

"Now, my dear Socrates, when concerning the way in which gods and men honour virtue and vice, we find statements such as these made repeatedly and in the same tenor, what can we think will be the effect on the souls of those who hear them, young men of good natural dispositions, who, like bees, fly from one statement to another, gathering from them all an answer to the question, What must a man be and what paths must he take if he would live the best life possible? Naturally he will say to himself in the words of Pindar, 'Shall I by justice or by crooked wiles ascend that wall so high, and so fortify *myself* for life? For what do men say? If I am just, unless I also seem just, I gain no advantage, but manifest toils and pains. But if I am unjust and have acquired the appearance of injustice, a heavenly life, they say, is *mine*.'"

Plato, one may be sure, would have had little patience with modern shibboleths about altruism, or social service, or working for the good of the race, or protests against preoccupation with individual salvation. He was quite certain that a man's business was just this, to work out his own salvation, to do his own work, and in this respect his attitude finds confirmation in the Gospel. "What doth it profit a man, if he gain the whole world and lose *his own soul*?" or "What shall a man give in exchange for his soul?" True philosophy, religion and common sense are here on common ground. All recognise that a man's work is to seek his own good. It will not be surprising, therefore, if the conception of good is prominent in Socrates' doctrine and discovered to be the ultimate principle of everything. When this is realised, it seems to be clear that the culminating part of the dialogue, dealing with the ideas and the idea of the good, necessarily arises in the course of the discussion, and is not a layer of Platonic metaphysics superimposed on Socratic ethics.

V.

Socrates, then, is challenged in the most serious way possible by the powerful statement of the moral problem at the beginning of Book II. to decide the respective claims on man's devotion of perfect justice and injustice. The method he chooses has ever since been a standing puzzle to his critics and interpreters. Thus Dr. Strong remarks that "the question of the ideal state arises by the way. The largest question is apparently a parenthetic one raised simply as useful to the solution of a *completely different problem*."¹ Again, the contending claims of the "historical" and of the "Platonic" Socrates, or perhaps rather the attempt to combine them, is made to account for the difference

¹ Italics mine.

between the presentation of the problem and the method applied to its solution. Thus Mr. Lindsay remarks:—

"Further the question as to the nature of justice was one which it was natural for Socrates to ask and impossible for him to answer. All that Socrates could do was to show that the answers ordinarily given were inadequate. In Book I. we have a dramatic representation of his doing this. Socrates had also left some hints as to how questions of that kind ought to be answered. These are worked out in Books II.-IV., which are less dramatic than Book I., because we have in these books Plato's development of Socrates' teaching. But this method, in turn, proves inadequate. Recourse is now had to Plato's metaphysics and Socrates becomes merely the mouthpiece of his teaching."

The more one ponders on this passage, the more astonishing it appears. The assertion that Socrates, the father of moral philosophy, was disabled from explaining the nature of justice is a piece of pure dogmatism. It is surely hazardous to say what such a remarkable character as Socrates could or could not do. The idea obviously is a deduction from the preconception of the "historical" negative Socrates, and, of course, if you start by defining "the historical Socrates" as merely a critical inquirer, whose sole occupation was in pulling other people's ideas and arguments to pieces, you must deny his claim to be a constructive thinker. But, apart from the really important question in regard to the plot of the *Republic*, *viz.*, the sequence of ideas and the validity of the argument employed by the Socrates of the dialogue, no matter whether he is or is not "the historical Socrates," it remains a question of some interest whether a thinker, who was unable to answer questions, *i.e.* who inquired or criticised without any constructive standpoint, could possibly have achieved the commanding position in the history of moral philosophy that Socrates has as a matter of fact secured. Nor again does there seem to be any sufficient ground for supposing that the development of Socratic hints should necessarily be less dramatic than the representation of other kinds of Socratic teaching. The assertion arbitrarily limits the possibilities of Plato's dramatic genius. The last sentence certainly is highly disputable. Books II.-IV. are only inadequate in the sense that the beginning of anything is inadequate without the middle and end. Books V.-VII. are not added on, because the previous argument had failed through inadequacy, but because they are, in the mind of the author of the dialogue, the necessary development and culmination of the argument, which prepares for them. It is true that at the beginning of Book V. Socrates pretends that the argument is finished, just as he pretends at the beginning of Book II. that he thought that he had

"got rid of the argument". But in both cases Plato only employs a familiar dramatic device for articulating the plot. Nothing is clearer than his evident intention to make the argument of one piece—to make sure that all the conclusions arrived at are absolutely consistent with the original 'admissions'. His method is to lead his readers up a staircase of argument. But it is not a continuous ascent. Single flights are continuous. But at intervals he comes to a landing, as it were; and there he halts for a while to take breath and take stock of the logical position, by looking backwards and forwards, before climbing higher and finally reaching the very top of his watch tower. As long as the inner nerve of the argument is not sought for, so long will the puzzle remain that in the first half of the *Republic* there is a not quite successful combination—not successful, because it has not escaped the sharp eyes of disintegrating critics—of the negative criticism of a philosopher who could hint an answer, but could not give it in full, and of the dogmatic undramatic exposition of the inadequate development of Socratic hints. Nor is it surprising to read almost immediately afterwards that the results of this are "the curious form" of the dialogue and the difficulty of "saying precisely what is the subject of the *Republic*," and that the last-named difficulty is attributed to Plato's belief that "it is impossible to answer satisfactorily the questions between the just and the unjust life without at the same time answering other questions of almost equal interest". Thus do speculations about the temporal genesis of a philosophical work darken the counsel of those who would understand its unity, and by consequence its validity, as a treatise on moral philosophy.

Another cause of misunderstanding is the attention paid to Plato's or Socrates' attitude to contemporary Greek politics, and the tendency to regard the *Republic* as in some sense a political pamphlet. Thus Mr. Lindsay says of Books II.-IV.: "Their aim is to preserve those elements in it (*i.e.* Greek society) which were good, or, as Socrates prefers to say, 'natural,'" and he contrasts the "hopefulness" of those books compared with the pessimism of the next three. But, if the *Republic* is to be considered specially interesting as a historical document containing 'an indictment of Greek civilisation,' it is scarcely likely that its value as a work of speculative philosophy on a universal human problem, *viz.*, whether it is better or not for the individual, *i.e.*, for any and every individual always and everywhere, to chose justice rather than injustice as the principle of conduct will be properly recognised. The clue to understanding

it will hardly be found by concentrating on the contingent, local, and temporary aspects of the dialogue rather than on the necessary, universal aspects of it.

There can be no doubt, however, that it is not easy to see why Plato threw his solution of the problem into the precise form which he adopts. It has certainly perplexed his critics and interpreters, and it is worth while to examine some of their accounts of it. Mr. Nettleship says: "There seems at first sight scarcely any connexion between this question and the answer that he proceeds to give to it. For he begins by passing suddenly to the subject of the genesis of society," and he adds: "to understand the importance of this transition is to understand the whole argument of the *Republic*" (*Lectures on the Republic*). According to Nettleship, Plato's method consists of two parts: "(1) to analyse facts about human nature which are apparent to everybody, and to examine the significance of those facts till he arrives eventually at the inmost principle of human nature of which they are the expression," the postulate of this method being that "all the institutions of society, class organisation, law, religion, art, and so on, are ultimately products of the human soul, an inner principle of life, which works itself out in these outward shapes," and which in these larger letters is easier to read and understand; (2) "to answer the question, Given the fact of society as it is, what are the conditions which its existence implies? What is it in human nature which makes society exist," and his answer consists of a "logical picture of the origin of society in this sense, that it illustrates what the existence and maintenance of society demands, and how these various demands can best be satisfied, taking these demands in a certain logical order," and, he continues, "Plato has embarrassed us by the form of his inquiry," by putting things in a picturesque instead of an abstract way.

Now it is not very difficult to understand that justice is the same in principle whether in the individual or in the State, and is consequently easier to recognise on the larger scale; that society is an outward expression of psychological principles, and that to understand the morality of the individual it is necessary to understand the morality of the society to which he belongs. But the point to note is that Plato does not proceed to examine "society as it is," but does an entirely different thing. He describes it as *it ought to be*, as it must be according to nature ($\phi\gamma\sigma\epsilon i$). He draws a picture of what a society would be like if every individual acted with absolute consistency according to what he thought was best for himself,¹ in the satisfaction of his needs. He does not

¹ *Republic*, p. 369.

analyse existing society, at any rate in Books II.-IV., "society, as it is," in Mr. Nettleship's words, but states the conditions, principles, presuppositions, causes, or whatever is the correct term, of an ideal, perfect society, *i.e.* of society as such, properly so-called—in short, of society in idea, 'as it really is,' in Plato's own phraseology, of society, disengaged of everything which would make it fail of being society. The problem to solve, then, is not why Plato sketches a commonwealth at all, instead of examining the individual, or discussing the nature of justice and injustice in a formal abstract manner, in order to arrive at a conclusion about what should be the individual choice, but why he sketches a perfect commonwealth, society in idea, and further why he sketches the perfect commonwealth in its development from the beginning.

It is all the more necessary to mention this aspect of the case, because no less a scholar than Gomperz seems to have gone seriously astray in regard to it. He calls attention to two transitions in this section of the dialogue: first, the transition from the individual to society; and secondly, the transition from the real to the ideal. The "genetic method" by which, he says, Plato gives his approval to the materialistic conception of history, "yields place to ideal construction". 'So it was' gives place to 'so it ought to be,' a transition which Gomperz considers of most far-reaching consequences.

"Now at a stroke," he writes, "he abandons the description of actual processes, or what might pass for such, and begins to design a pattern state utterly different from anything ever realised in history. Genetic method yields place to ideal construction. Was Plato conscious of this abrupt reversal? Or how did he think it might be justified? To these questions the following is probably the right answer. Plato does not think he is setting forth a purely subjective ideal, as one of many possible; its fundamental principles are capable of realisation, but perfections demanded by human nature of what already exists, which seemed to him a further stage in the process of natural development. The more progress, the more visible is justice."

As Gomperz is evidently somehow aware that this explanation is somewhat mixed, he promptly proceeds to blame Plato for the muddle, instead of revising his own views. He suggests that it was—

"no doubt impossible to attain perfect smoothness and continuity in a work intended to weld together three main themes whose internal connexion was but *slight*:¹ moral, political and historical philosophy. Some harshness of transition was not entirely to be avoided especially at the junction of the two last-named themes."

¹ Italics mine.

When a critic starts with the idea that there is only a slight connexion between things which Plato considered vitally connected, it cannot be wondered at that he fails to throw light on Plato's process of argument. But the failure serves to illustrate both the undoubted difficulty of comprehending the nature of the argument, and also the danger of coming with preconceptions to the interpretation of Plato. It may of course be urged that after all Plato's real interest was in sketching an ideal State and that he effects a transition to it at the earliest convenient stage in the discussion; that his real interest was in what Dr. Strong calls "apparently a parenthetic question," "completely different" from that with which he started. But such a theory is in conflict not only with the emphatic restatement of the problem for the individual in Book II. but is in direct contradiction to a number of express statements in the course of the construction of the ideal State, in which Plato reminds his readers that he has entered on this long inquiry with the express purpose of finding out what justice is. Nothing could be clearer than that the sketching of the ideal State is auxiliary to the main inquiry, is, in fact, just Plato's way of answering the question. Hence he is not switching off his interest from a smaller to a larger problem, but he is strictly adapting his argument to the solution of the original problem, whether justice is better or not than injustice. This surely is the meaning of such passages as the following: "If in our argument we were to watch a State in the making, should we not see its justice and injustice in the making also" (p. 369). Before discussing education, he says: "Now, how shall we rear and educate these guardians? Will this inquiry help us in discovering the object of all our search, namely how justice and injustice arise in a city?" (p. 376). Again he is unable to complete his account of the literature permissible in his ideal State; for "it is impossible for us, my friend, to lay down rules for them at present".... "When we have discovered the nature of justice and have found that it is naturally profitable to him who possesses it, whether he have the reputation of a just man or no, shall we not then agree that stories which deal with men must be of the nature we have indicated" (p. 392). Or again "for it was our idea that in such a city we should most certainly find justice as we should find injustice in the worst governed city, and by inspecting both we hoped to decide our old question" (p. 420). And "it was in order to have a standard that we were inquiring what justice itself is like, and what the perfectly just man would be like, if he should come

into existence and were inquiring similarly as to injustice and the unjust man" (p. 472). Such passages show quite clearly that Plato knew perfectly well that he was tackling a personal problem, and that he had deliberately adopted this apparently roundabout method of approach to pierce into what R. L. Stevenson calls "the central metropolis of the self". The problem then to be solved is, How does this delineation of the ideal State help in this direction, and how does the argument make such a process necessary? Why cannot you see what justice in its essence, nature, or perfection is like, without seeing what a society in its perfection is like? Why is it necessary first to establish such a city, before "getting a light" and searching within?

VI.

The clue to this problem will be found by referring to the method of argument discussed and approved by Socrates in Book I., page 348. He points out there that if the parties to an argument match speech with speech, and enumerate the advantages claimed by either, it will be necessary to add up and measure them, and a jury will be necessary to decide between them. Now it would clearly be difficult for a jury to measure the relative advantages of the just man and the unjust man as portrayed by Glaucon, between the man who will "steal anything he wishes from the very market-place with impunity, enter men's houses and have intercourse with whom he will, kill or set free whomsoever he please, and walk among men as a god," and the man who will be "scourged, racked, fettered, will have his eyes burnt out, and at last, after all manner of suffering, will be crucified, and will learn that he ought to desire not to be but to seem just," for want of a common standard acknowledged by both contending parties. Moreover, a jury would find its labour lost, for one side maintains that after all there is nothing to decide, for the picture of the just man is only a fancy portrait, which not only does not but could not correspond to anything real, for it is contended that no one could be of such adamantine nature as "to abide in justice and have the strength to abstain from theft and to keep his hands from the goods of others," and consequently suffer the treatment above described. And even, if, *per impossible*, a jury were to decide in favour of the just man, its authority would be repudiated on the ground that it is biased.

The rhetorical method, then, being out of the question, it is necessary to follow the other method, which dispenses

with an independent jury. It is thus described in Book I. : " But if we follow our previous form of inquiry, arguing till we come to an agreement, then we shall be at the same time jury and advocates " (p. 348). Socrates, accordingly, adopts the familiar and only true logical method of proceeding, *ἐξ ὁμολογουμένων*, according to which the discovery of truth is a joint-stock affair. In such a process, both sides are equally interested in tracing out the consequences of what they have agreed upon at the beginning, and both are obliged to be convinced of the truths which follow from the admissions with which they started. Either in persuading the other is persuaded himself.

The object of real argument is that both sides should agree at the conclusion ; but the conclusion depends on principles, premises, starting-points. Hence the important thing is to agree about the beginnings of the argument, for unless the parties to it agree at the start, they will never agree at the end.

How then is Socrates to find first principles which will command the assent of the upholders of two such opposed ideals as those portrayed in the first and second books of the *Republic*. According to the one creed justice, according to the other injustice is, in the words of Thasymachus, "beautiful and strong". It looks impossible to find some common ground from which to start—and all the more so, as the Sophists held that justice was really an illusion, a sham thing, forced on mankind (*ἀναγκαῖος* and *ἐπίπονος*), but never a real thing, deliberately willed as a good (*ὡς ἀράθον*). It was truly a "stubborn" problem, but Socrates solved it by his method. He had to find something which not only he admitted for himself, but something which his opponent admitted for himself. That is to say, his method postulated something common to all selves, even to those ranged in absolute opposition to one another. There were he believed, if only they could be brought to light, certain first principles (*ἀρχαὶ*), or intuitions, which every self would acknowledge, for in acknowledging them every consciousness was akin to or at one with every other consciousness. Indeed, if there were no such principles, all argument, all attempt at consecutive assertions, would be impossible. Hence his principle, *γνῶθι σεαυτόν*. He exhorted every one to know himself, because he believed that the self of every one was worth knowing, and that, all selves, in so far as they grasped the common universal first principles of thought and conduct, were united. If, then, he could find certain first principles which all would acknowledge without exception, he would have prin-

ciples of universal validity, leading to consequences which were universally binding. He could start securely if he began with propositions which, as he said to Cephalus, in the first book, "every one would say" ($\pi\hat{\alpha}s \; \dot{a}v \; \epsilon\hat{i}\tau\omega i$). But, secondly, how were these principles to be found? Socrates answered, by induction. And no matter what may be the exact etymological meaning of this word—whether it means, to lead the universal truth to the mind of the hearer or *vice versa*—it always implies that the mind is made to recognise for *itself* as certain some general truth, which it reaches by reflexion, *i.e.*, by probing into its consciousness or experience, and it does not matter *whose* mind is immediately concerned, whether of the questioner or answerer in an argument. For in the recognition of the truths reached by induction, both minds, nay, all minds, are the same. It is the mind in general, the consciousness common to all individuals, which by reflexion sees the universal in the particular, and consequently is able to produce or recognise the particular instance as exemplifying or manifesting the universal. Hence the dialogue form, in which two different speakers converse, is an accident, and not necessary to the employment of the inductive method, which is equally applicable to controversial or 'negative' dialogue, in which false principles are overthrown, or to the so-called 'dogmatic' dialogue, in which the consequences of true principles are traced out, or to the dialogue of the soul with itself, of which, in fact, the two former processes are only outward representations. There is, however, another aspect of Socrates' method which is to be noticed—his well-known *eipaveia*—his pretence of ignorance or profession of intellectual humility. When he is arguing in order to upset false principles, he gets his opponent to admit something, which leads to consequences which the latter must accept, and which yet are inconsistent with his original position. When he acknowledges the suggestions offered by Socrates, he is not aware of the contradictions into which he will fall, and so, like the actor in a Greek tragedy, he speaks truer than he knows, and makes statements whose full significance only becomes clearer later on. But 'irony' is no less applicable to dialogues which are constructive or dramatic, like the body of the *Republic*. The Sophists denied the existence of justice as a good deliberately chosen by men, and maintained that, if every one had the ring of Gyges, *i.e.*, under an ideal state of things, all would choose the same path—commonly called the path of injustice. Against opponents then who denied the existence of a thing, it was useless to

state its nature (*ὅτι ἔστιν*), until its existence had been first established, until the question, *εἰ ἔστιν*, has first been answered. It would be futile to assume that justice and injustice are two distinct qualities, to state their definition in general, abstract terms, and then decide which is to be preferred. And Socrates at the close of the first book gives expression to this thought. No; justice must first be exhibited in the concrete as a really existing thing. Then, when it was recognised as having an *οὐσία*, a substantial nature, its definition could be given—a definition, not nominal, but real, expressing the essence of a determinate nature. Definition, in other words, must presuppose knowledge and experience of reality. To define, you must know or experience, and, if you are to know anything, it must first exist. But if you are dealing with an opponent who does not acknowledge the independent reality of the thing you propose to define, the 'ironical' method is the only one which it is possible to adopt. You are obliged to secure from him the admission of first principles, the full significance of which he does not at first realise; and then, by the maieutic method, their consequences are systematically deduced, the embryonic idea contained in the original admission is brought to birth, and the existence of what was originally denied stands out in clear and well-defined lines. So in the *Republic*, Socrates elicits the acknowledgment that every one does what he thinks is best for himself, and seeks his own good to the uttermost, and then shows concretely that this impulse, if carried out with absolute consistency, is just what we mean by justice—good in action. Further, his definition is of the universal, for he exhibits a principle the operation of which is without exception, and independent of time and circumstance. Unlike the formulæ of Cephalus, Polemarchus and Thrasymachus, which are merely generalised summaries of portions of social experience, he has got hold of the principle which makes all social experience possible, and which must therefore be universal. Justice, Socrates argues, is the expression of the idea of good in society, the principle according to which men's needs are really and best satisfied. Therefore in order that justice may be realised, men must know how it is good. For the practice of virtue knowledge of the good is necessary. Just as the belief in what is best for each consistently applied brings the elementary State into being, so the increasing knowledge of good develops it until at its highest stage full consciousness of the idea or principle of good is necessary to maintain society in its perfection. We see then that the peculiar nature of the argument, with

which Socrates had to deal, necessarily determined the use of the characteristic features of his method and doctrine so intimately associated with his fame — ‘know thyself, induction, irony, definition, universal truths, and virtue is knowledge’.

Let us now examine the application of the Socratic method in the body of the *Republic*. Socrates is opposing counsel who are briefed for injustice, Thrasymachus, Glaucon and Adeimantus, and consequently must hit upon some position which would be admitted by the most vehement advocate of sophistry. Otherwise he can never carry them along with him. In Book I. he employed his method of extracting admissions for the comparatively easy task of upsetting his opponent; it is eristic and, as ordinarily understood, ‘dramatic’ in effect. Thus, when Thrasymachus defines justice as the “interest of the stronger,” Socrates causes him to make an admission which leads to a direct contradiction to his definition. Now, however, his object is not to pull down, but to build up, dogmatic rather than critical. He accordingly must find principles which everybody and, by consequence, his opponent, must admit, and which will form starting-points for a self-consistent theory which also must be universally acceptable. He then tracks out the *ἀρχαί* in all their ramifications, shows what they involve, and thereby proves to the company that, if they accept the logically deduced consequences of their *ἀρχαί*, as they must do, they *ipso facto* demonstrate the essential superiority of justice, the reality of which they affected to deny.

How then does Socrates set about his task? As usual, he takes his cue from the opposing side: he accepts ‘the grip’ offered him by Glaucon and Adeimantus. Their theory is an account of what society would be, if it were organised according to what is best, and purports to describe the genesis of justice. Socrates might have pointed out certain inherent weaknesses in their account, *e.g.* that it is somewhat remarkable that what is the naturally best thing (to injure) leads inevitably to what is naturally worse (not to be injured), artifice or convention overcoming nature. Or again he might have pointed out the entirely arbitrary distinction between the individual and society involved in their views; for society provides a field of fools to be preyed upon by the enlightened, unjust individual, who has the pluck, the power and the cunning to override conventions successfully. Thus, though natural injustice first gives way to unnatural conventional justice, there is always a road back to nature open to

the person who will tear off the mask of social hypocrisy and be 'a man'.

There would, however, have been little satisfaction in showing up these inconsistencies. And the brothers had supplied another cue in propounding their hypothesis of a single motive for human conduct. Glaucon had maintained that every man, whether just (so-called) or unjust (so-called), if he had the power to do as he liked, would be found to follow the path of *πλεονεξία*, which every one naturally pursues as good. And Adeimantus had shown further that in the popular mind justice is followed grudgingly and of necessity (*ώς ἀναγκαῖον*), not as a good thing freely and spontaneously pursued (*ώς ἀγαθόν*). Their theory postulated an absolute antithesis between necessity and free will, between what a man must do and what he wills to do, an opposition, which Socrates has to overcome by demonstrating that unsophisticated human nature does with a will what it must do. The problem accordingly is to find out what is truly good according to unbiased human nature, what is ultimately the correct interpretation of good, whether, in fact, there is any real and ultimate distinction between good and evil. It certainly is a "stubborn" problem to determine whether the idea of good does or does not impose any restraint on the exercise of *ἐπιθυμία*, whether the satisfaction of *ἐπιθυμία* does or does not necessarily involve a limit upon the individual in his relations with other individuals. There are, then, three conceptions suggested in the course of the discussion to Socrates—society, nature, good, and his problem is to discover a starting-point involving all these ideas, on which both sides must agree.

The argument is at a deadlock so far as justice and injustice are concerned, and so Socrates quietly drops them as such for the time being. He says in effect to the Sophist: "You base your conceptions of justice and injustice on an analysis of society. The method is quite a good one, and I will do likewise. Without society, there certainly cannot be justice or injustice either. Justice therefore presupposes society. Let us then turn to society and ask ourselves how it originates, and, having originated, how it develops. If we can see how society begins, we shall see how both justice and injustice also begin, and how they both develop. Let us therefore begin at the very beginning, casting aside all preconceptions. Let us ascertain what there must be in society at its lowest terms, if it is to be society at all. You assume that in a natural state of society everybody would follow his *ἐπιθυμία*, and in so doing would pursue what he

conceives to be his good. You say that every one naturally wants to get as much good for himself as possible. Very well, let us take you at your word, and work the thing out from beginning to end. If we accept the principle that good is the satisfaction of want or desire, we shall start on common ground. The problem of life for each one is to do the best for himself. We are all agreed about that. Let us then apply this conception to society, and see what happens, what must happen, if we contemplate society originating through the operation of the motive that each should do the very best for himself. We will not prejudice the issue by blaming or praising it as a selfish motive. We will be content to assume that every individual is naturally actuated by self-interest alone; and we will watch where this motive, if acted upon with clear and enlightened consciousness, will land us." In the first book Socrates had been accused by Thrasymachus of indulging in his 'customary irony,' because he pretended not to know enough to be able to answer questions and therefore confined himself to asking them. There we had its negative application, which consisted in drawing out his interlocutor and making him contradict himself. But Books II.-IV. illustrate its positive application, for they show that the principle which is acknowledged at the beginning of the argument, and which must be acknowledged as the indisputable presupposition of society—if they like to call it so—the principle of the social contract, involves also the principle of justice, in fact *is* nothing else than the principle of justice in actual operation; that the creative principle of human life and well-being and justice are really equivalent terms. A careful reading shows how well the ironical method is maintained all through the argument. All direct discussion of justice as something to be apprehended as already before them, is studiously avoided, while at the same time it is insisted repeatedly at important stages that the argument will eventually bring to light the nature of justice. In this way justice is made to unfold itself gradually as a concrete principle in actual operation, and only at the end of the process is its nature fully revealed. A few quotations will illustrate this aspect of the argument. "Perhaps justice is discoverable somewhere in the mutual needs of these same persons" (p. 372 A). "Perhaps we shall discover it (justice) in the luxurious city" (p. 372 E). In page 376 C it is admitted that the inquiry into the proper education of the guardians will promote the discovery of justice, and at this apparent digression Socrates remarks that he wishes to omit nothing useful nor to occupy him-

self with anything redundant (a remark which, it may be noted in passing, is surely a covert assertion on Plato's part that the *Republic* is intended to be a unity, and not a patch-work). In 392 C it is found necessary to postpone the settlement of the question as to how the λόγοι are to speak of men till the nature of justice has been discovered. It is probable that such erroneous views as that "unjust men are happy, many just men are miserable, injustice is profitable if it be not detected, and justice the good of another, but a man's own loss," will be excluded. But the matter cannot be decided "till we have discovered what sort of a thing justice is and that it is naturally profitable to him who possesses it". That is to say, it is useless to predicate about anything in the abstract till it has first been experienced in the concrete; and Socrates' aim is to make his hearers experience the thing justice as the working principle of society, confident that they must needs acknowledge its superiority, when they see it. Finally, the full significance of the ironical method in its positive application to constructive thought is revealed, when the seekers after justice find (p. 432) that they have been applying the principle of justice all the time, unawares, in setting forth not only the original indispensable conditions of society, but in its subsequent development. They have been expecting justice to 'turn up,' so to speak, as a result, but it is in fact the cause of all social effects or phenomena, in so far as they are truly social.

"Why, my good sir," says Socrates, "it appears that the quarry has been rolling before our feet the whole time and we have never seen it, but have made fools of ourselves. Just so people sometimes go about looking for a thing, which they are holding in their hands, and we have been gazing somewhere miles away instead of looking at the thing before us, and quite probably that is how it has escaped us."

Here then clearly is an intimation that the ironical method of Socrates can be applied, not merely to the refutation of an opponent, but as a means of analysing one's own conceptions—of 'knowing oneself'—in the joint pursuit of truth. If we really see what it is that is implied in society—what makes it what it is really or should be—alike in its lowest terms and in its development to its highest stages, we *ipso facto* see that the fundamental presupposition is justice—"the virtue which enabled all the rest to find a place in the State and after they have appeared preserves them so long as it is present in the city" (p. 433).

Before proceeding to show how Socrates succeeds in confuting the sophistical theory by his selection of first principles for his own theory, it may be well to remark upon certain

objections or difficulties that have been raised in connexion with his account of society. One objection is that it is defective on the historical or anthropological side. Thus Dr. Strong (*Platonism*, p. 222) says: "It does not go back far enough upon the physical conditions of life to be in a true sense an account of the origin of social life". And again (p. 223) he says "he (Plato) does not in the end find an ultimate *social* instinct in man," and yet once more (p. 224), "The account of the origin of society in the *Republic* leaves the end or purpose of the combination somewhat obscure," —a complaint which is somewhat remarkable, considering that Plato says in so many words that the end or purpose of the combination is the betterment of each through mutual help in the supply of needs and services. Such criticisms are doubtless due to current biological obsessions impelling people to search into the historical origins of things in the temporal order; but they involve a complete misconception of Plato's object and method. They have been sufficiently and decisively controverted by Nettleship in his *Lectures on the Republic*, in which he shows conclusively that Plato is giving a *logical* picture, not an *historical* narrative, is making a philosophical inquiry into the conditions of society or human life, not writing a natural history of its growth. His object is to show the absolute minimum of conditions of society as such—what you cannot do without, if you are to have society at all—and to show the principle of society, whether at its maximum or its minimum, is one and the same. It is not his intention to trace the progress *historically* of the evolution of primitive into civilised society like an anthropologist, e.g. the transition from the savage pack into the pastoral and agricultural communities, and so on. He is, in short, describing not the natural (in the sense of physical) conditions, but the moral and spiritual conditions of society as such, and showing how they express themselves in precisely the same manner at every stage of development, simple and complex, and how they are the presupposition of the transition from the simple to the complex.

Another difficulty is that raised by Glaucon that the State in its first stage ($\pi\rho\omega\tau\eta\ \pi\delta\lambda\iota\sigma$) is only a 'city of pigs'. The objection has been echoed by commentators on Plato, and has constituted a standing difficulty. Whatever else Plato was thinking of, he was not thinking of eighteenth century dreams of returning to 'noble savagery' in the woods, nor of nineteenth century notions of progress, measured for the most part by standards of material comfort, still less was he making an excursion into materialistic sociology. Nor does

the passage represent a desire to indulge in a pretty picture or to find a stepping-stone for passing on to real business. The whole passage, in fact, is a striking rebuke to all attempts to identify moral and material values. As long, he seems to say, as you seek to discover justice in the outward or material aspects of society, or as belonging to any particular element, you will never find it. "Then where in it?" he asks Adeimantus, "shall we find justice and injustice? with which of the elements we have noticed did they make their entry?" "I cannot see," replies Adeimantus, "how they came in, unless we find them somewhere in the mutual relations (or need) of these same persons." "Well," returns Socrates, "perhaps you are right. But let us consider the matter and not draw back. And first, let us consider what will be the manner of life of men so equipped" (pp. 371, 372). If language has any meaning, surely these words mean to suggest that justice is not the property or result of any particular aspect or element in the State. It is something comprehensive or universal, consisting perhaps in "a certain usefulness which its citizens have for one another". But as the truth of this is only dimly and hesitatingly realised, it may be worth while to see if justice can be found in the outward aspects of life—in other words, if it is a function of a certain standard of civilisation. The merest glance at such a society is enough to dispose of such a theory. You might as well seek for justice among pigs. And then the thought naturally occurs, well, if it cannot be found in a society where the simple healthy animal wants are satisfied, perhaps it is more likely to be found in a society equipped with all the resources of civilisation. But analysis soon shows that justice is not a matter of one grade of civilisation or another. It is not an affair of externals—it is a principle of life and health for the social organism as such at all stages of its development, not a function or effect of any particular part or state of it. Or, we might put the case thus: Plato means that however far you go in your analysis of society, you can never reach a stage in which justice is not there also. The sophistic theory was, on the contrary, that if you carried your analysis of society far enough backwards or downwards, you would come to a state of things in which justice was not to be found. Before or below the social contract they imagined there was no such thing as justice. But Socrates shows that society is a contract from the very beginning. You do not find human society first, and then a contract,

which modifies it, but the two emerge simultaneously, being in fact one and the same thing, and justice is inherent in it, in fact *is* it. According to the Sophist, the social contract makes justice: according to Socrates, justice makes or is the social contract. "I do not care," Socrates suggests, "how far or how deep you go in your analysis of society; you may come to a state in which man is little better than the animals, a state which is to all intents and purposes 'a city of pigs'. Still even there, in that lowest, most primitive, and most material state, justice is the life blood, the principle and possibility of its existence. You may take society to pieces as much as you like, and reduce it to its simplest elements, but you will find that, without justice, they have no life or health, just as much as when society is in its most developed, most civilised and ideal condition. You may, if you like—and I do not object—represent society as a combination of the fewest possible atoms actuated solely by the desire of doing what is best, each for himself, but you will have to admit that without justice those human atoms will never form a social world. So long as they form a social world at all, justice must be the spring of action in every individual."

Another difficulty is raised by Gomperz (*Greek Thinkers*, iii., p. 65), who points out how the genetic method yields place to ideal construction. "So it was," gives place to "so it ought to be," a transition, which he says is of far-reaching consequence. When we remember that Plato is in the first stage of the argument asking himself what is involved in society as such, what society must have or imply that it may be a society at all, we see at once that there cannot be any question between the actual and the ideal. The *πρώτη πόλις* is no more actual than the *δευτέρα πόλις* or the *τρίτη πόλις*. His state is ideal from beginning to end. What he is seeking to demonstrate is the principle of what society is according to nature, *i.e.* the idea of society at its best, and what this principle means, if it is applied with absolute fidelity. The ideal nature of the society becomes clearer, as its development advances; but it is no less present, though dimly seen, in the initial stages of the society. Without the principle, you cannot have society at all. If the principle is impeded in its operation, you may have a kind of existence which falls short of society's true nature. But with it and with it in unimpeded activity, you must have the ideal. And it is ideal, because natural, true to nature and the norm or standard of what is best. To reach the best possible, Socrates is quite content with the Sophists to

go "back to nature". But whereas they find a universal anarchy, which on their own confession has no elements of permanence, he finds *kourovía* and an already operative idea of good, which in society is justice (*μεταδίδωσι δὴ ἄλλος ἄλλῳ, εἴ τι μεταδίδωσιν ή μεταλαμβάνει, οἰόμενος αὐτῷ ἀμεινον εἶναι*, p. 369).

II.—THE INFLUENCE OF MATHEMATICAL CONCEPTIONS ON BERKELEY'S PHILOSOPHY.

BY G. A. JOHNSTON.

THAT Berkeley was keenly interested in mathematics is well known. In the *Commonplace Book* a great deal of attention is paid to mathematical questions; it is noticeable, indeed, that Berkeley refers in its pages to mathematicians far more frequently than to philosophers. The extent of his interest in mathematics is indicated also by a group of early writings, *Arithmetica absque Algebra aut Euclide demonstrata*, and *Miscellanea Mathematica*, which includes papers, "de Radicibus Surdis," "de Cono Aequilatero et Cylindro eidem Sphaerae circumscriptis," "de Ludo Algebraico," and "Paraenetica quedam ad studium matheseos praesertim Algebrae". Both these tracts were written in 1705 and first published in 1707. Belonging to the same period is the essay *Of Infinites*, which deals in part with the infinitesimal calculus. Berkeley deals also with mathematical questions in *The Principles* (1710) and in *De Motu* (1721), and his criticisms of the principles of the calculus in *The Analyst* (1734) and *A Defence of Free-thinking in Mathematics* (1735) are of some importance in the history of mathematics.

In this paper I do not propose to say anything of Berkeley's mathematics as such: what I wish to do is to indicate two respects in which his philosophy was affected by mathematical conceptions.

It is fairly clear that the conceptions of mathematics exercised on Berkeley's mind the same sort of influence as the idea of evolution exerted on the philosophy and literature of the second half of the nineteenth century. When Berkeley began to write, at the beginning of the eighteenth century, mathematics was *the* science. Mathematical work of all kinds had been encouraged by the wonderful results progressively achieved in the previous century and particularly in the immediately preceding two or three decades. Mathematics was revolutionised in 1637 by Descartes' discovery of the so-called cartesian or analytical geometry. The work of

Descartes and Cavalieri, who, following Kepler, developed the use of the principle of indivisibles, was extended and systematised by Wallis, Professor of Geometry at Oxford, in a series of important works extending from 1656 to 1686. The next great advance in mathematics was made when the fluxional or differential calculus was invented almost simultaneously and probably independently by Newton and Leibniz. These and other mathematical discoveries, whose importance was only coming to be fully realised when Berkeley was beginning to write, led to the entire reconstruction of the science, and rendered possible the further extremely rapid progress of pure mathematics and its application to the world of nature in mechanics and physics. At that time the place of mathematical and physical science was almost exactly similar to that occupied 150 years later by biological conceptions. One or two illustrations will help to give point to the analogy. When Richard Bentley was appointed to give the first course of Boyle Lectures on the Being of God, he wrote to Newton for instructions how to read the *Principia*, and in his lectures he applied the conceptions of the *Principia* just as theologians of later date applied the conception of evolution in their apologetics. Again, Locke, in spite of mathematical incapacity, assimilated as best he could the argument of the *Principia*, after having carefully inquired whether the mathematical calculations which he was unable to follow might safely be accepted. Mathematical conceptions form the warp and woof of the thought of the day; and Berkeley, like everybody else, was exposed to their influence.

At two points, one of them of central importance in his philosophy, Berkeley attempted to "apply" mathematical conceptions. By making use of comparatively recently discovered methods of calculation by signs and symbols he sought to give an explanation of nature and its laws by means of the relation of sign and thing signified, and thus establish an Algebra of Nature; and he endeavoured to develop an Algebra of Ethics by applying algebraic methods to the problems of morality.

To take first the Algebra of Nature. According to Berkeley's well-known theory, the relation between cause and effect in nature is a purely arbitrary one. Cause and effect are connected by no necessary tie; they bear to one another merely the relation of sign and thing signified. By experience we learn that such and such ideas are followed or attended by such and such other ideas; certain sequences and concurrences occur regularly and uniformly. The pre-

ceding ideas are not, Berkeley avers, the *causes* of the subsequent ideas; they are merely the *signs* that warn us that they will be followed by certain other ideas. Thus Berkeley's theory of causality becomes a doctrine of signs.¹

This doctrine of signs occupies a highly significant place in Berkeley's philosophy. "I am inclined to think," he says, "the doctrine of signs a point of great importance and general extent, which, if duly considered, would cast no small light upon things, and afford a just and genuine solution of many difficulties."² In particular, he makes use of the conception of signs in his theory of vision and in his account of universality in knowledge. But though the importance of the doctrine of signs to Berkeley's philosophy has been very generally recognised, it has never been made clear, so far as I am aware, that the use of signs in mathematics did much to suggest to Berkeley, or at least to confirm his belief in, the importance of a metaphysical theory of signs.

It must be remembered that Berkeley's great object, as he tells us again and again, is to simplify philosophy and "abridge the labour of study". Now, in mathematics it is the great function of signs to abridge the labour of study and to simplify methods and explanations. This function of signs is apt to be overlooked by us, for we take the use of signs in mathematics simply as a matter of course, and should be unable to conceive a mathematic without signs. But in Berkeley's day the extended employment of signs in mathematics was still almost a novelty, and he takes pains to point out the value of those branches of mathematics which are specially concerned with signs in the simplification of the sciences. "Modern algebra," he says, "is in fact a more short, apposite, and artificial sort of language."³ Now, philosophy has always suffered, Berkeley believes, from the ambiguity and unsuitability of the language with which it has been forced to work. What advances, then, might we not hope for, if we could employ in philosophical investigation a perfectly determinate and suitable terminology? Such a terminology, Berkeley hoped, might be supplied by signs akin to those of algebra. Algebra is *par excellence* the science of signs, and, according to Berkeley, a little attention to algebra and the way in which it uses its signs "may possibly help us to judge of the progress of the mind in other sciences; which, though differing in nature, design, and object, may yet agree in the general methods of proof and inquiry".⁴

¹ In Locke's classification of the Sciences (*Essay*, IV., xxi.) the third division of knowledge is termed "Σημειωτική or the doctrine of signs".

² *Alciphron*, ii., 343.

³ *Ibid.*, ii., 344.

⁴ *Ibid.*, ii., 342.

It is possible to realise the impression made upon Berkeley's mind by the conception of signs only if we keep in view the way in which, shortly before his day, signs had come to be used in mathematics and especially in algebra. I shall therefore give very briefly an account of the development of the use of signs in mathematics in the decades immediately preceding the time when these problems began to occupy Berkeley's attention.

The first signs to be used were naturally those of addition and subtraction (+ and -); yet even these were not generally accepted symbols till about 1630. And it was much later before uniformity was reached in the use of the other chief signs. From 1631 onwards English mathematicians used the sign \times to denote multiplication, but many French mathematicians, following the usage of Descartes, indicated the operation by a dot. And it was denoted by Leibniz in 1686 by the sign \sim . A similar lack of agreement existed as to the symbols with which to represent division. It was usually indicated by the method, copied from the Arabs, of writing down the quantities to be operated upon in the form of a fraction by means of a line drawn between them, in any of the forms $a-b$, a/b , or $\frac{a}{b}$. English mathematicians, however,

frequently indicated it by a dot. In 1686 Leibniz used the sign \sim . The symbol = for equality was not commonly used till the time of Newton; previously the word was written out fully, or the signs ∞ or ω were used. The sign :: to denote the equality of two ratios was brought into common use by Wallis in 1686. The relations *is greater than* and *is less than* were, at the beginning of the eighteenth century, indicated either by our present signs $>$ and $<$, or by \sqsupset and \sqsubset . The negative symbols \neq for *is not equal to*, $\not>$ for *is not greater than*, and $\not<$ for *is not less than* had not been introduced in Berkeley's time. The use of indices to denote the power to which a magnitude is to be raised had only comparatively recently become general. As early as 1637 Descartes used indices, but only positive integral ones, e.g. a^2 , a^3 . In 1659 Wallis used and explained fractional and negative indices, e.g. a^{-1} , $a^{\frac{1}{2}}$; and Newton was the first to use an index infinitely large, e.g. a^n .¹

Now practically all these signs, it must be repeated, were comparatively new in Berkeley's student days; and their

¹ The above account of the development of signs in mathematics has been derived from W. W. R. Ball, *A Short History of Mathematics*, p. 212 ff.; F. Cajori, "The Works of William Oughtred," in the *Monist*, July, 1915, p. 441 ff.; and M. Cantor, *Geschichte der Mathematik*, *passim*.

use had hardly yet become common. Still, it was already clear how wonderfully they had contributed to the progress of mathematics. They had enabled it to advance by simplifying its methods, for before they were introduced all mathematical operations had to be written out fully in words, and mathematical demonstrations, unless they could be represented geometrically, were cumbrous and tedious.

Berkeley himself was greatly interested in the use of signs in mathematics. In the *Miscellanea Mathematica* he indulges in a perfect orgy of symbols. The appendix resembles nothing so much as a few pages from Russell and Whitehead's *Principia Mathematica*. And he suggests, in the short paper, "De Radicibus Surdis" (1707), as a simplification of the usual method of representing surd quantities, the introduction of a new symbolic notation of his own. Roots, he points out, might conveniently be represented by Greek letters: β , for instance, would express \sqrt{b} , δ would stand for $\sqrt[3]{d}$, and so on. Similarly \sqrt{bc} would be written $\beta\kappa$, and $\sqrt{\frac{bdm}{e}} \beta\delta\mu$. But he sees that, if this notation were adopted, it would not enable us to distinguish square roots from cube roots and those of higher powers; and he therefore makes the alternative suggestion that roots should be expressed by the same method of dots as was then used for fluxions, so that \ddot{a} would stand for \sqrt{a} , $\ddot{\alpha}$ for $\sqrt[3]{a}$, $\ddot{\alpha}$ for $\sqrt[4]{a}$, and so on.

Worthless as this is in itself, it is of value for the light it throws on Berkeley's interest in symbols as such. He was interested in them because they were still so new that changes such as he advocated might yet be suggested with some hope that they would be generally adopted. But another consideration weighed with him. Though fifty or even twenty-five years before his student-days signs had been used by mathematicians with but little uniformity, they had already by the time he began to write become fairly standardised, so that the same symbols always and everywhere meant the same thing. This meaning was, indeed, arbitrary and artificial, but for Berkeley the important thing was that it was a definite and determinate meaning. And by the use of similar signs in philosophy he hoped to be able to introduce exactness and accuracy, and at the same time secure results which could be demonstrated so that all who agreed in the meaning of the signs would be forced to give assent to the conclusions. And finally, he expected that by such an application of signs in philosophy it would be possible to simplify it, and rescue it at once from the "meaningless subtleties" of the

Schoolmen, and from the "occult complexities" of the Cartesians.

When Berkeley speaks of the importance of signs, he is thinking specially of the use of signs in algebra. His interest in algebra is proved not only by his frequent references to it in his works, but also by the juvenile publication, *De Ludo Algebraico*. In this tract, after explaining the algebraic game, which he advocates on the characteristic grounds that it is both as pleasant a recreation as chess and a useful exercise in algebra, he concludes by making the most extraordinary claims for algebra. It may usefully be applied, he says, "to the whole extent of mathematics, and every art and science, military, civil, and philosophical". "Through all of these," he continues, "is diffused the wondrous power of algebra. By all it is regarded as a great and wonderful art, the topmost pinnacle of human knowledge, and the kernel and key of all mathematical science."¹

After thus giving his own testimony to the value of the application of algebra in the sciences, Berkeley proceeds to appeal for confirmation to the evidence of Descartes, Locke, and Malebranche.² Unfortunately the passages in these philosophers to which Berkeley refers shed very little light on the application of algebra. Locke, whose *Conduct of the Understanding* Berkeley refers to, speaks very favourably of algebra, but he says nothing of the possibility of applying its methods directly to other sciences.³ And Malebranche, to whom Berkeley also refers, though he expresses himself with more vigour and enthusiasm than Locke, does so with equal vagueness. He merely insists, as Berkeley does, on the ease and simplicity with which by means of algebra we are able to abridge the labour of study; and he declares that algebra, along with arithmetic, forms the foundation of all the sciences, and supplies the means by which they may be acquired.⁴ The point on which both Malebranche and Locke insist is the value of algebra in *simplifying* the sciences in which it is applied.

In Berkeley's day the most notable example of the application of algebra in mathematics was supplied by the analytical geometry of Descartes. Descartes substituted simple algebraic methods, which could be applied universally, for a more or less cumbrous geometry requiring new constructions for each particular problem attacked. Analytical geometry gives us a method of representing

¹ *Works*, iv., 60.

² *Miscellanea Mathematica*, iv., 62.

³ *Conduct of the Understanding*, § 7.

⁴ *Recherche de la Vérité*, VI., i., 5.

curves and curved surfaces by means of simple algebraic equations. Instead of having to draw a special figure for each case of a problem, as we must do in ordinary geometry, it is only necessary to know the general equation to the curve, and any particular property may then immediately be deduced by an application of ordinary algebra. In this way the application of algebraic methods in geometry immensely simplifies what would otherwise be exceedingly complicated operations.

The possibility of applying algebra outside mathematics had occurred to many thinkers in Berkeley's day, and algebraic methods had been applied, often very foolishly and fantastically, to all sorts of problems. Berkeley himself notes its application in medicine and natural philosophy; and he refers, with evident appreciation, to the use that had been made of it in demonstrating the credibility of human testimony. As an example of this he gives a reference to an article in the *Philosophical Transactions of the Royal Society*; and it seems worth while, as an instance of the sort of "application" he considered feasible, to indicate the scope and argument of the article in question.

In this article,¹ which is anonymous, the writer considers the credibility of evidence. He examines, for instance, the reliability of the report that £1200 has been given to him by somebody. He assumes that the credibility of the average report is $5/6$ absolute certainty, and that if it be at second-hand it will be $\frac{25}{36}$, i.e. $5/6$ of $5/6$, and so on. This may be stated algebraically as follows, if we put a for the share of certainty given by a single reporter, and c for what is lacking to make the certainty complete. The degree of certainty at first-hand is $\frac{a}{a+c}$, at second-hand $\frac{a^2}{(a+c)^2}$, at third-hand $\frac{a^3}{(a+c)^3}$, and so on. Other questions considered in the article are the credibility of oral tradition and the accuracy of written tradition involving several copies of the original document. In the same year as this paper appeared (1699) a book was published bearing a title copied from Newton (*Theologiae Christianae Principia Mathematica*), and dealing with the same problems as the article. The author of this book, who may also have been the writer of the article, was one John Craig. He calculates by mathematical methods that the evidences of Christianity, gradually deteriorating, will be

¹ "On the Credibility of Human Testimony," *Philosophical Transactions*, 1699, vol. xxi., No. 257, p. 359.

reduced to nil in 3150 A.D., and that a new revelation will then become necessary.

Berkeley avoided the absurdities and extravagances of such "applications" of algebra, but he was actuated by the same spirit in his attempts to apply algebraic methods to the relations of signs in Nature.

Just as algebraic signs suggest to us, or enable us to infer,¹ the things they signify (*e.g.* from the collection of signs $x^2 + y^2 = c^2$ we infer, according to the cartesian system, a circle with its centre at the origin), so the signs which we see in Nature suggest to us, or enable us to infer, the things they signify. Thus, to use Berkeley's illustration, a fire which I see suggests to me, or enables me to infer, that if I approach too near to it I shall suffer pain.² Similarly, the noise that I hear suggests to me, or enables me to infer, that some sort of collision or concussion has taken place.

The relation between the sign and the thing signified is not necessary. The sign does not immediately and inevitably suggest the thing it signifies; the relation between them must be learned. To the savage the group of signs $x^2 + y^2 = c^2$ does not immediately suggest a circle; the expression suggests a circle only to the man who has learned the relation between sign and thing signified. So, the fire does not necessarily suggest pain; it suggests pain only to "the burnt child," only to the person who has learned the relation between the sign and what it signifies.

But though the relation is not necessary, it is uniform. It is uniform—to use a modern term which well expresses Berkeley's meaning—within a certain universe of discourse. Within the universe of discourse of cartesian geometry $x^2 + y^2 = c^2$ uniformly enables us to infer a circle, and within the universe of discourse of the Earth fire uniformly enables us to infer pain if we approach too closely.

But Berkeley insists that the relation is an arbitrary one. The choice of the particular group of signs $x^2 + y^2 = c^2$ to represent a circle is perfectly arbitrary. Yet it always enables us to infer a circle, because there is universal agreement among mathematicians as to the meaning of these signs. Similarly, the relation between fire and pain is arbitrary, but the latter always allows us to infer the former, because it has been so decreed by God. It is due to the arbitrary though not capricious will of God that certain natural signs always suggest certain natural things signified. The connexion is purely arbitrary.

¹ Between suggestion and inference there is an important epistemological distinction. See Berkeley's *Theory of Vision Vindicated*, § 42.

² *Principles*, § 56.

And this, Berkeley argues, is all we mean by causality. Causality is not the relation of cause and effect, it is the relation of sign and thing signified. The fire that I see is not the *cause* of the pain I feel on approaching it too closely, it is the *mark* or *sign* that forewarns me of it.¹ Similarly, the noise that I hear is not the *effect* of the collision, but the sign that enables me to infer that a collision has taken place. The sign may thus be either what is commonly called the cause or what is commonly called the effect. If it is the "cause," it suggests, as the thing signified, the "effect"; and if it is the "effect," it suggests, as the thing signified, the "cause".

Berkeley thus implies the strict correlativity of "cause" and "effect," and with such a doctrine as the plurality of causes he would have no sympathy. Every sign in Nature is correlated by God with some one thing which it signifies; there is a pre-established harmony between them, and, as the sign strictly suggests only the one thing signified, so the thing signified suggests only the one sign. A thing signified cannot be signified by a plurality of signs; it is suggested only by its own proper sign.

Nature is systematically organised by God so that signs and things signified preserve this one-one relation. As the Language of Nature—to use Berkeley's own phrase—is a perfect language (for it is the language of God), each word in it stands for some particular thing or idea, and each thing or idea in the universe has its appropriate and particular name. Thus, in the mind of God, Nature is absolutely systematic, and signs and things signified are perfectly adjusted. This divine language constitutes, for Berkeley, the system of the laws of Nature. The language of Nature reveals a "consistent uniform working," and shows that its laws are "connexions established by the Author of Nature in the ordinary course of things".² These laws of Nature, representing a pre-established connexion in the mind of God, are absolutely settled and fixed, and in accordance with them everything in Nature takes place with perfect uniformity.

Now, as Berkeley points out, men often doubt the uniformity of Nature and the universality of its laws. The reason for this is that the laws of Nature are not self-evident. They need to be learned, and the universe may well seem to be a chaos before we have learned its meaning. This meaning is not supernaturally revealed to us at birth. God, it is true, excites in us from time to time certain ideas which are

¹ *Principles*, § 65.

² *The Theory of Vision, or Visual Language Vindicated*, ii., 398.

connected by set rules in his mind, but he does not explain their connexion to us all at once. We must learn by experience, we must acquire God's notation, as we have to learn that of Leibniz and Newton. We understand the laws of Nature, "the set rules or established methods wherein the mind we depend on excites in us the ideas of sense,"¹ only when we are able to interpret God's symbolism, just as we understand the theorems established in the *Principia* only when we are acquainted with the notation which it employs. Hence it is the great task of science to try to understand the divine symbolism. "It is the searching after and endeavouring to understand this Language (if I may so call it) of the Author of Nature that ought to be the employment of the Natural Philosopher."²

In the process of seeking to understand this divine language of the laws of Nature we may often attain some knowledge of the sign without fully or exactly comprehending what it signifies. The sign may suggest *something* to us, and we may be able to make use of it, though we may be quite unable to formulate precisely what it does suggest. Here again the analogy of mathematics makes Berkeley's meaning clear. Such signs or groups of signs as $\sqrt{-1}$ and π mean something, and may be used in mathematical operations, though it is impossible to express numerically exactly what they suggest. So, even though it be impossible to explain precisely what certain signs in Nature suggest, we may make use of these signs, and may indeed maintain that, though we cannot formulate them exactly, there *is* something that they suggest.

But in general we *are* able to learn by experience the precise relation between sign and thing signified. God follows certain rules in the organisation of Nature, and, as men succeed in discovering these rules, the relation of sign and thing signified becomes ever clearer. God creates certain organisms in much the same way as men combine letters in words and words in sentences. As the relations of words are clarified when they appear in sentences, so the relations of things are elucidated when they are seen in their proper context as elements in machines or organs in organisms.³

The question may be raised, why, if God is the ultimate and omnipotent cause, he requires organisms of complex structure to produce effects which he could equally well have created by a single fiat of his will. To this question Berkeley's answer is that all the elaborate organisation and mechanism is "for our information". It is not necessary

¹ *Principles*, § 30.

² *Ibid.*, § 66.

³ *Ibid.*, § 65.

for the production of the effects themselves, but it is essential in order that they should occur "according to the laws of Nature".¹ Things must be produced by God by the same methods and in accordance with the same processes, in order that we, perceiving the appropriate signs, may have due warning that the things signified will follow.

Thus the two functions of the laws of Nature or the methods of God's operation are (*a*) to guarantee the uniformity of experience, and (*b*) to enable us to use foresight for the benefit of life. Without these two conditions of experience knowledge and action would be alike impossible. But, as it is, we are able to acquire scientific knowledge of Nature, to pass judgments of value on actions, and to predict the future with sufficient accuracy to make practical activity fruitful.²

In all this Berkeley is oscillating uncomfortably between a theocentric and an anthropocentric view of the universe. From the point of view of knowledge the balance dips towards the theocentric theory, but in regard to practice Berkeley is decidedly anthropocentric.

On the one hand, the reality of the universe is due entirely to God. From the human point of view the laws of Nature by which the world is governed seem to have no reality. They are simply convenient names which indicate the regular order with which in our experience sign and thing signified constantly occur. A law of Nature is not even a category which *we apply*.³ It is nothing but an arbitrary relation devised by God for our information. But the apparent unreality of the laws of Nature vanishes when we survey them *sub specie aeternitatis*, for as thus conceived they exist in the mind of God and have perfect reality; they are not only real but the forms in which all reality exists. From the point of view of knowledge the world is necessarily theocentric.

On the other hand, from the practical standpoint, the centre of the universe is man. Though God is the ultimate cause, and acts always in accordance with his own will, all his activity is directed to secure the greatest value for life to finite persons. He goes to the trouble of putting countless cogs in machines, and innumerable organs in organisms (all from his point of view useless), solely for the benefit of life of finite spirits. The whole universe is benevolently ordered by God for man's advantage; and thus, varying a well-known title, we may say *servus servorum Deus*.

We now turn to Berkeley's application of mathematics in ethics. That the possibility of an Algebra of Ethics was

¹ *Principles*, § 62.

² *Ibid.*, § 62.

³ *Ibid.*, § 66.

suggested to him by Locke is made clear in the *Common-place Book*. "N.B.," he says, "To consider well what is meant by that which Locke saith concerning algebra—that it supplies intermediate ideas. Also to think of a method affording the same use in morals, etc., that this doth in mathematics."¹ Now, Locke had himself given a hint of the way in which mathematical methods might be followed in a demonstrative moral science. According to his theory of knowledge, certainty means simply the agreement or disagreement of our ideas, and demonstration consists in making clear that agreement by employing intermediate ideas or mediums. In mathematics algebra had been of use in supplying these intermediate ideas, and Locke is inclined to think that by applying algebra in ethics a demonstrably certain system will be produced. "I doubt not," he says, "but from self-evident propositions, by necessary consequences, as incontestable as those in mathematics, the measures of right and wrong might be made out."² For Locke mathematics and ethics alike are pure *a priori* sciences, independent of the matter of fact of experience. If they had to do with concrete experience, they would consist of (a) simple ideas, or (b) complex ideas of substance, and in neither case would the science be demonstrative, for (a) simple ideas give us knowledge that is "barely particular," from which no universal propositions can be inferred, and (b) the general knowledge we gain from complex ideas of substance is "merely probable".

Berkeley never worked out his algebra of ethics. But he said enough to show that his system would have diverged widely from that of Locke. The difference between their theories of ethics would have been exactly parallel to that which throws into such marked contrast their theories of mathematics. For Locke mathematics is a pure science dealing with relations of universal ideas, and abstracted from all concrete existence. On the other hand Berkeley holds that mathematics is essentially practical. The speculative parts of mathematics, which are concerned with *difficiles nugas*, are cut away by the New Principle, and only those portions of arithmetic and geometry and algebra that are "useful" and "practical" will remain.³

In precisely the same way Berkeley's theory of ethics differs from Locke's. For Locke ethics is a pure science, having as its subject-matter relations of ideas, and omitting all question of the realisation of these ideas in the concrete

¹ *Works*, i., 40.

² *Essay*, IV., iii., 18; cf. III., xi., 16.

³ Cf. *Principles*, §§ 121, 131.

matter of fact of moral experience. But Berkeley's view is very different. Ethics is an applied or practical science: it is concerned throughout with actual conduct; and its subject-matter is moral experience. And its great aim is the improvement of conduct and the advancement of the good cause of the world. Hence, though algebra may be regarded from one standpoint as a pure science, since it deals with signs in abstraction from the things that they signify, the algebra of ethics, being concerned with actual moral experience, must be a department of applied mathematics. That is what Berkeley means by saying, "Morality may be demonstrated as mixt mathematics".¹

Berkeley agrees with Locke that ethics is a demonstrative science. But by that he does not mean, as Locke would have said, that its demonstrability consists in proving relations of ideas by means of intervening ideas.² In Berkeley's view, ethics is not concerned with ideas at all, but with marks or signs; and it is by means of these words or signs that it must be demonstrated. "We have no ideas," he asserts, "of virtues and vices, no ideas of moral actions."³ In other words, we can neither perceive nor imagine virtue or vice in abstraction from concrete virtuous and vicious actions. Thus, if the demonstrability of ethics depends on the consideration of relations between ideas, as Locke maintained, Berkeley fears that it will be impossible to arrive at demonstrative truth in ethics; and he insists that those who agree with Locke that we may have ideas of morals have given themselves, in the demonstration of ethics, an impossibly difficult task.⁴ It is impossibly difficult, because we can have no certainty about ideas, as Locke supposed, but only about words.⁵ We may, indeed, *reason* about ideas, but by doing so we shall never attain demonstrative certainty, for "demonstration can be only verbal".⁶ Perfect demonstration, that is, is possible only when we are dealing with words or signs. And Berkeley states as his conviction that "to demonstrate morality it seems one need only make a dictionary of words, and see which included which".⁷

This utterance in itself is perhaps rather cryptic, but, if we bear in mind Berkeley's general view of the applicability of algebra in the various departments of knowledge, its meaning becomes plain. In his view algebra is "purely verbal" and "entirely nominal";⁸ it deals with relations of arbitrary signs, and when they are employed demonstration is possible

¹ *Works*, i., 46.

² *Ibid.*, i., 40-43.

³ *Ibid.*, i., 36.

⁴ *Ibid.*, i., 38.

⁵ *Ibid.*, i., 43.

⁶ *Ibid.*, i., 50.

⁷ *Ibid.*, i., 39.

⁸ *Ibid.*, i., 47.

because there is uniformity in their use. Though they are arbitrary, their meaning is universally agreed upon, and therefore demonstration by their means is of absolute cogency. Now, words are not so well suited for demonstration as signs, because there is not universal agreement as to the meaning of words. Mathematicians are universally agreed on the meaning of such signs as + and -; but the meaning of the word "truth" or "good" is not a matter of universal agreement. But Berkeley believed that this was not a fatal or ultimate defect in words. It was only in the last half century before he wrote that mathematicians had attained uniformity in the use of signs, and he hoped that it would soon be possible to reach similar agreement as to the use of words. To this end it would be necessary to make a universal dictionary, whose definitions would be sufficiently authoritative to command universal assent. If the meaning of words were settled, propositions in ethics would be demonstrated as readily as propositions in mathematics. It is universally agreed among mathematicians that such propositions as

$$2 + 2 = 4 \\ \text{or } \log(1+x) = x - \frac{1}{2}x^2 + \frac{1}{3}x^3 - \frac{1}{4}x^4 + \dots$$

are true.¹ In these cases the meaning of all the terms used is a matter of universal agreement. And if similar agreement existed as to the meaning of words, then such ethical propositions as "Man is free" and "God ought to be worshipped" would be universally admitted to be true, for they would be absolutely demonstrable. The latter proposition, for instance, would be readily demonstrated, as Berkeley says, "when once we ascertain the signification of the words God, worship, ought".²

Berkeley's former example of a demonstrable proposition in ethics supplies a good illustration of what he means by saying, as he frequently does, that ethics deals with the relation of *inclusion*. He mentions that it is part of the task of demonstration in ethics, after we have compiled our universal dictionary, to see which words *include* which. And elsewhere in the *Commonplace Book* he points out that ethics is concerned with "definition, or inclusion, of words,"³ and that it deals with "signification, by including".⁴ What he means by this is that if we take such a

¹This series was discovered independently in the seventeenth century by Mercator and Saint-Vincent, and though it was not used as an example by Berkeley it serves well to indicate his meaning.

²*Works*, i., 41; cf. i., 32.

³*Ibid.*, i., 55.

⁴*Ibid.*, i., 37.

proposition as "Man is free," it is possible to demonstrate it when we know that "free" is included in "man". Given definitions in our universal dictionary such that the definition of "free" is comprehended within that of "man," and the proposition "Man is free" is universally demonstrable. In this theory of the nature of inclusion Berkeley has been influenced by mathematical analogies. The expression $\log(1+x)$ includes the series $x - \frac{1}{2}x^2 + \frac{1}{3}x^3 - \frac{1}{4}x^4 \dots$. The series is analysed out of it. So, Berkeley believes, by an application of mathematical methods in ethics we shall be able to demonstrate relations of inclusion and exclusion between words.

Berkeley's mathematical theory of ethics is in harmony with his general philosophical position. For, according to his theory of knowledge, we reason on a particular which stands for all other particulars of the same kind. As representing other particulars it becomes a sign, and performs the functions of universality. But Berkeley insists that this function is not an idea, and he objects to Locke's theory of ethics on the ground that the abstract ideas which he had posited do not exist either in mathematics or in ethics. It is impossible, Berkeley has shown, to frame an abstract idea (which means, in his terminology, an abstract concrete percept or image) of triangle. Equally impossible is an abstract idea of justice. In ethics we are never concerned with the abstract, but always with particular instances of just or unjust actions. What we do is to take this or that just act, ignore all irrelevant features, and make it stand for all other just acts. On these particular cases we may reason in precisely the same way as we do in mathematics. In mathematics we give names to these particulars, and these names or signs are universal, or rather, perform the functions of universality. Similarly in ethics signs are used, these signs being words and not ideas.

The only obstacle mentioned by Berkeley in the way of such a science of ethics is the very great difficulty of reaching agreement with regard to its definitions. The definitions which mathematics employs are not questioned, because the student comes to them with no preconceived ideas or prejudices. He is willing to take them on trust. But in ethics it is otherwise. Men approach the subject with pre-suppositions of their own, and, clinging to these primitive convictions, they refuse to come to any agreement in the definition of terms.

One very real difficulty which Locke raised is denied by Berkeley. Locke pointed out that the complexity of moral

ideas increases the difficulty of dealing with them on the mathematical method. But in this difficulty Berkeley sees nothing. Yet if we extend the term "complexity" to include the relations and context of moral experience,¹ the difficulty becomes a very pertinent one. On Berkeley's theory, if we take a particular triangle it is possible to abstract what is irrelevant to its triangularity, and the particular may be taken to stand for or represent all other particulars of the same kind. And, as we have seen, Berkeley thinks the same thing may be done in ethics. But, of course, it is not thus possible to isolate a particular just act. If it be cut loose from its context, it may no longer be a just act, for its justice may consist precisely in the complex relations in which it stands to its environment. But though Berkeley was not aware of this difficulty in the days of the *Common-place Book* it is clear from *Alciphron* that he came to appreciate it later. And this may well have been one of the reasons why he abandoned the project of writing a mathematical treatise on ethics.

¹ This involves a departure from Locke's meaning of the term.

III.—DREAMS AS PSYCHICAL EXPLOSIONS.

By J. C. GREGORY.

DREAMS, as is generally recognised, often, if not always, disturb our sense of time's duration, and this disturbance is only definitely known to act in one direction. A dream may pass like a flash and appear to last for days. There is no evidence that a dream can last throughout sleep and seem to occupy a second. Whenever the circumstances are such that we can estimate the time actually occupied by the dream and the corresponding interval through which we seem to live the dreaming mind exaggerates and never reduces. This might be due to our inability to gauge the actual duration of dreams except in certain cases where it is obviously very short. We wake with the sense of duration impressed upon us by the dream and, unless there are adequate means for estimating its real length, this impression is our only possible estimate. If we dream of the events of years we may suspect that we have exaggerated an interval that cannot have lasted for more than about eight hours. Dreams, however, frequently resemble the separate scenes or acts of a play rather than a perfectly continuous narrative, and, just as a drama may cover fifty years in three hours, a dream may only last for a night and yet, without any real disturbance of the sense of time, represent a life-time. The more usual inference would be that the dream really lasted longer than it seemed. It is comparatively rare for dreaming to appear greatly protracted and very often it is composed of one incident—a snap-shot as it were. Blowing one's nose, even with the characteristic dream difficulty of finding the handkerchief, could be easily managed in a dream of eight hours. Since it is usually impossible to say whether the dream really persisted throughout sleep or occurred during the last second there remains no means of estimating its actual duration except the impression of time made upon the mind. The natural impulse, doubtless, is to regard dreams as lasting as long as they appear to last. In studying dreams there is the additional tendency to regard the whole period of sleep as the actual period of dreaming.

In one particular type of dream, however, the actual process is obviously very short and its apparent duration relatively long. This happens when a disturbance at once awakens the sleeper and produces a dream. In a dream of this character the victim raced into a station to catch a train that was just starting. He reached the platform and as he arrived at each open carriage door it banged to. He woke to hear the loud shutting of the house door. The sound of this shutting evidently originated the dream and, since he woke rapidly enough to hear the actual closing, the dream must have passed much more rapidly than his experience seemed to last. In Maury's well-known dream he lived through some stirring scenes of the Terror and woke as the knife of the guillotine was descending on his neck. The curtain-pole of the old-fashioned four-poster bed had fallen on his neck—simultaneously awaking him and inducing a blood-curdling dream. Here again the dream must have been instantaneous though it appeared as a much longer series of incidents. There are so many dreams on record in which the disturbance that awakes is obviously the origin of the dream that coincidence (the curtain-pole CHANCING to hit Maury's neck as he dreamed of the descending knife) is out of the question. In these dreams the actual duration can be estimated and observed to be much shorter than it appears to the dreamer. In connexion with the drawing out of time that characterises consciousness in these dreams the position given to the originating stimulus is of interest. The impact on Maury's neck STARTS the dream but appears, or rather is due to appear, for the knife does not touch bottom, at the END. The sound of the closing door starts the dream but does not begin it, though it sounds repeatedly throughout the latter half. The dreaming mind seems to draw out time and draw it backwards. This inversion effect, the originating stimulus appearing at the end of the dream, is frequently observed in dreams of awakening by disturbance. The dream is practically instantaneous—all the incidents separated in time by the mind being really in consciousness together. During its imaginary extension in time of events really simultaneous the dreaming mind, so to speak, pushes back all experiences except the impression made by the originating stimulus, which it keeps tied to itself. This suggests that the disturbance of the sense of time is part of a sort of general convulsion—a view in keeping with the observed fact that an external stimulus explodes the dream upon the waker.

Dr. Gregory describes the case of a gentleman who was

unable to sleep in a lying position without a choking sensation. This sense of constriction regularly aroused a terrifying dream of a struggle with a skeleton that gripped his throat with its bony hand. He found that he could sleep in a sitting posture and adopted this plan of exorcising the phantom. A sentinel was stationed by his bed with instructions to wake him instantly if he should fall into the prone position. One night he slipped down and complained on being roused that he had not been waked promptly enough to prevent a long tussle with the skeleton. The sentinel asserted that he had been waked the moment he slipped. From the known circumstances it was evident that the dream seemed to be much longer than it really was. Here again the dreaming mind experienced a sense of duration in which the actual time was greatly magnified.

Lord Holland was one of a company when a book was being read aloud. At the beginning of a sentence he dozed off, and after a long dream awoke to hear the end of the sentence. This incident also indicates that when it is possible to estimate the real duration of a dream it is invariably found to be much shorter than it seems.

The usual explanation of this disturbance of the sense of time is very simple. We have the same sense of time in the dream that we should have had if the events really took place. Our experience of real life habituates us to certain feelings of duration in connexion with certain events, and when the dream persuades us that these events are occurring we feel towards them, regarding their duration, according to our usual habit. The dream of the aggressive skeleton was short, but, since a real struggle generally fills up some considerable time, the dreamer instinctively felt towards the dream as he would have felt towards the actual event. In so doing he would only carry to completion the process of imparting external reality to a mental process. Dreams are usually characterised by an ascription of reality to mental images and for this ascription to be complete the time-setting must bear some reasonable relation to actual life. In speaking of "the abolition of the sense of time in many of our dreams" Bergson remarks: "Our attention to this external and social life is the great regulator of the succession of our mental states. It is like the balance wheel of a watch, which moderates and cuts into regular sections the undivided, almost instantaneous action of the spring. It is this balance wheel which is lacking in the dream," and he adds that the dreamer "is no longer capable of that attention to life which is necessary in order that the inner may be regulated

by the outer, and that the internal duration fit exactly into the general duration of things". But surely the error of the dreaming Maury, as of the dreaming wrestler with the skeleton, is an over-scrupulousness of appeal to this balance wheel. If not his "attention to life" at any rate his memory of it makes him firm in the belief that the scenes of the dream are separated by long intervals of time. His fundamental error is mistaking mental pictures for actual events but there is no further failure in "the precision of adjustment that requires effort," for, granting that the scenes are actual, he times them correctly.

The preceding explanation quite recognises that attention to external and social life regulates the succession of our internal states, with the addendum that various successions become associated, through this regulation, with certain feelings or impressions of duration. It adds that when the dreaming mind mistakes rapid mental images for real events it completes the illusion by fitting them with their appropriate time-intervals. The disturbance of the sense of time is thus a measure of illusion rather than of a failure in the attention to life necessary to fit internal duration into the general duration of things.

It may be noted in this connexion that dreaming appears to confer an additional power of recalling impressions. It would be difficult to reproduce in memory, for example, the sensations experienced during the heaving of a boat. The writer can recall a dream of being in a tossing boat in which the characteristic sensations were vividly present. These particular sensations have a peculiar flavour of their own that brings out very clearly the enhanced power to reproduce the "feeling" element in dreaming. Judging from this dream, it would be possible to dream of toothache and actually experience the pain that real toothache would give. Ordinary waking memory is practically confined to remembering that we had toothache and the general circumstances connected with it—including the fact that we experienced pain—but is incompetent to reproduce the actual pain. Similarly, we cannot actually reproduce the peculiar sensations produced by heaving motion though we can remember having had them and recognise them when they are again experienced. The reproduction of the sense of duration, when the dreaming mind imagines itself in the thick of events that require it, would seem to be a similar extension of the power of reproduction in memory. The dreamer believes himself to be in a tossing boat and under the conditions of dreaming he succeeds in reproducing the sensations appropriate to the incident; in the

same way he succeeds in reproducing the appropriate sense of duration when the dream, though really lasting but a moment, is construed as real events normally requiring a more extended period.

But is either this explanation or Bergson's modification adequate? Dreaming is not the only condition that leads us to mistime events. Time passes quickly when we are interested and slowly when we are bored. Life, in one aspect, is a continuous alteration of the sense of duration. The year is long to the child and short to the mature man. Suspicion arises that our explanation must be supplemented by the recognition of some other alteration in the mind's sense of duration induced by the conditions of dreaming. It is a curious fact that Bergson's description of some of these conditions appears at first sight to furnish in a natural and inevitable way such a supplement—curious because, though his opinion of these conditions, on first thoughts, seems to fit the observed lengthening of time in dreaming, this opinion seems to be mistaken and the real supplement, so far as it may be needed, must be sought elsewhere.

Bergson describes the state of the dreaming mind as one of relaxation and he speaks of its being disinterested. "The dream consists of the entire mental life minus the tension," he says in one place, and in reporting an imaginary conversation between the waking and dream ego he makes the latter say, "I was doing nothing". "To sleep is to become disinterested" is no doubt correct, though the implication that dreaming is a condition of disinterestedness is not a necessary conclusion. He adopts it, however, and for him the dreamer is disinterested and mentally relaxed. Whenever we can trace the disturbing effect of dreams on the sense of time we find that time is lengthened. Bergson illustrates by the Maury dream and in this the dreamer magnified duration. Now we all know the occasion when we are mentally relaxed, disinterested, and prone to think time longer than it is—it is when we are bored. We supplement, therefore, and supplement by a natural logic, by partially ascribing the dreamer's lengthening of duration to boredom.

This strange conclusion has the excellent effect of leading straight to the detection of an error both on the part of Bergson and of a host of writers on dreams. It is doubtful whether any dreamer would ever describe himself as bored. Not Maury under the guillotine, not the man who ran for his train, and certainly not the gentleman who engaged in nightly scuffles with a skeleton! The class of dream in which, as a rule, it is only possible to be certain that time

has been lengthened is usually the most remote of all from boredom. When we dream through awakening by disturbance we generally dream most vividly and keenly. The dreamer who had a skeleton for his opposite would be astonished to hear that his mind was relaxed, and very sceptical about its disinterestedness. In this and in many other dreams there is a perfect riot of excitement, and the fundamental feature of all dreaming is fatal to the view that they are products of relaxation and disinterestedness. Dreams delude us into believing they are real, they grip us, and a really relaxed mind could neither grip nor be gripped.

It is plain that when a stimulus simultaneously wakes the sleeper and originates a dream this dream passes rapidly during the moment of waking. The dream then represents a sort of psychical explosion. The unconsciousness of sleep corresponds to complete mental relaxation, and the dream occurs as the mind springs forward from relaxation into activity. A sudden RISE of interest is involved in the procedure, and it is probable that the expanded sense of duration may be connected with this rise. Ennui and interest are not so sharply opposed that while the former makes time drag the latter ALWAYS speeds it up. The duration of moments of intense excitement tends to swell. A moment under the paw of the lion may seem more like an eternity. Since the RISE of interest, characteristic of such situations and dreaming alike, is present in both cases the resulting influence on the sense of duration may well be similar. Since in the dream the interest rises suddenly from nil it may well have a strongly marked effect on the perception of time. Explosive effects are characterised by an element of concentration, any dispersal being ultimately due to such preliminary concentration, and the sudden concentration of interest as the mind rapidly awakes will have the effect of appearing to spread out the really instantaneous dream through a longer interval of time. Analogies are provided by the psychical effects of shock. The sailor mentally traversed his life as he fell between the yardarm and the sea. There is no question here of relaxation or disinterestedness, but of a sudden and explosive rise of interest that expands the sense of duration during the experience. There is no difficulty in realising that if a real struggle with a skeleton were brief it would seem to the victim like a protracted struggle. The effect of the dream is not different in principle though it may be more striking in intensity.

In short we must supplement our explanation, if we are disposed to admit of supplement at all, by referring the dis-

turbance of the time-sense in dreaming to the expanding effect of a sudden or explosive rise of interest. So far from the dreamer who dreams through sudden awakening being without mental tension he is the theatre of a sudden increase in such tension. It is doubtless true that the dreamer, in accepting the reality of his dream, naturally inclines to distribute the scenes in time in a close imitation of the duration of real events. But since our sense of time is affected by the condition of the mind itself, as well as by reference to the external order, it is natural to suppose that the process of enlarging the instant of the dream into a period more appropriate to the incidents regarded as real is materially assisted by the sudden rise of interest that is known to be capable, under other conditions that are still comparable to those of dreaming in respect of explosiveness, of expanding the sense of duration.

It is now clear that it is an error to regard dreams produced by a disturbance that awakes as occurring during sleep or in a mind subject to the characteristic conditions of sleep. They occur explosively during the momentary period in which the mind springs from unconsciousness to its waking realisation of the world. The circumstances under which they arise clearly indicate this, and the condition of the mind when dreaming is in complete harmony with this origin. The disturbance of the time-sense, when analysed, has favoured this conclusion, and a further examination of the nature of dreaming will confirm it. Writers often ignore this feature in dreams of awakening by disturbance because they include them with the larger residue where it cannot be definitely asserted that they occur during the waking moment, and they then regard all dreaming as a phenomenon of sleep. They thus tend to ignore that dreaming is essentially characterised by a RISE of consciousness and consequently to ignore the implications of this fact. Since the circumstances of the dream through awakening are usually the most completely known they constitute the most natural norm for comparison. These dreams indicate a sudden and explosive rise of consciousness as the character and condition of their origin. By extending this principle to all dreams it will be found that they submit readily to the line of explanation suggested by it. Since a sudden rise of consciousness is inherently likely to destroy the state of sleep it is natural to conclude that most dreams occur during the moment of waking. This supposition will be found to afford the most complete and satisfactory interpretation of the nature and origin of dreams.

There would probably be little dissent from Bergson's

statement that the mechanism of dreams is that of normal perception. Democritus seemed to realise this when he attributed dreams to the attack of simulcra, or images of themselves constantly rained off by objects, upon the soul during repose. Since he explained visual perception in a similar way there can be little question that, though he held a different opinion regarding the nature of the mechanism, he agreed with Bergson and many modern writers in thinking that this mechanism operates similarly in normal perception and in dreaming. Democritus emphasised the element recognised in modern psychology as sensation. Aristotle, in attributing dreams to the recognition during sleep of previous impressions made *via* the outward sense, emphasised the element of memory. A combination of the two points of view is expressed in Bergson's description of a dream as a union between memory and sensation. Perception is also such a union but, whereas the percept is dominated and mainly determined by the sensations, in the dream the memory is master and moulds the sensations into pictures according to its fancies. Bergson, with his usual felicity of expression, has stated the operations of perception and dreaming in a manner remarkably adapted to manifesting the connexion between them. It is, therefore, the more strange that he should have so strangely misconceived many of the conditions that are responsible for the divergence of the dream from the usual character of perception.

From one point of view perception is a process of divining. Certain sensations impress the mind and a supplemental act of memory establishes a particular perception—thus assigning a more or less divined cause to the sensations. In reading we do not actually see every letter or even every word, but grasp the sentence from a limited number of impressions to which memory supplies the appropriate context. Thus, short sentences incorrectly spelt or arranged are read as if they were correct when arrangements are made to expose them briefly to the subject of the experiment. The proof-reader has to acquire the art of seeing each word separately and distinctly or he will pass many mistakes. Normally, memory provides the correct context because the impressions received through sensation are sufficient to prevent any serious mistake. The mind, assisted by memory, solves its problem correctly because the data are sufficient. If the data are insufficient an incorrect solution becomes more possible and it is thus that illusion is liable to arise. If a page of manuscript is torn or dirty or worn with age so that letters and words are obscure or obliterated, there is a tendency

to misread in proportion to the degree of obscurity or obliteration. The dreamer is in the position of the reader whose manuscript is reduced to a few irregular, recognisable letters or words, and his dream represents one of the many possible solutions of the puzzle. In a dream of the writer's he darted along a narrow alley and found himself between two gigantic horses. The animals stood with their hindquarters at right angles and the dreamer stood in the angle with a shoulder touching each horse. On waking, he realised that he was lying on his back with a distinct feeling of pressure in each shoulder. The waking perception perceived the situation correctly because any extravagant explanation of the pressure on the shoulders was ruled out by the sum total of impressions. During the hurried moment of waking, as the mind exploded into consciousness, only this feeling of pressure was distinctly perceived and, for the moment, contact with the hindquarters of two mammoth horses was as good an explanation as any other. A striking feature of the dream was the instant when the victim's shoulders were in contact with the two flanks. The sensation of touching was clear and distinct—as if the dreaming mind were meticulously careful that the only impression of which it was sure should be suitably accounted for. Bergson speaks of sense perception being extended and often less in energy in sleep—that is in dreaming. He adds also that memory as a formative agent only brings confused impressions. Now the above dream was surely due to restriction of information provided by the senses. The dream was, moreover, a perfectly correct interpretation of the data at its disposal. A position in the corner between the flanks of two horses, as represented in the dream, would have produced feelings of pressure on the two shoulders. The impression of pressure was too clear and decided for any loss of energy to be predicated. Nor could confusion, in any sense of indeterminateness, be truthfully said to characterise the incident. The dreamer realised his imaginary position only too clearly and his apprehension of being kicked to death was painful to the point of agony. The determining sensation was clear and definite in the mind and the dream no doubt owed its origin to this very clearness and definiteness. It is difficult to understand how such a dream could ever be interpreted on the supposition that the faculties were "relaxed and not in tension". Interest, and where there is keen apprehension there must be interest, would be practically nil under such conditions. The real difference between the dream and the waking perception may be expressed as a hurried inference from inadequate data.

The mind had been wrapped in the unconsciousness of sleep. Waking is a sudden process and there is a sudden spring from complete relaxation to waking realisation. It is during this rise of consciousness that the dream passes. The impressions from the external world are not all realised at once—a fact closely connected with the rapidity and explosive character of the whole process—and only the pressure on the shoulders is noted. Memory acts vigorously on the hint and supplies the context that composed the dream. It might even be said that the mind is more active than in ordinary life—possessing a sort of explosive excitement. There is activity, there is interest, there is sensation and there is memory—the uniqueness of the situation lies in the previous unconsciousness and the hurry that involves mental action before complete contact with the external world is re-established.

It is quite true, as Bergson asserts, that the mind does not create when it is really *asleep*. He is referring to Stevenson's "A Chapter on Dreams" and arguing that no really creative work has been done in an actual dream. "Creation," as Bergson here uses it, evidently implies value, but from a purely psychological point of view value is irrelevant. The dream of the struggle with a skeleton was a creation, a constructive imaginative effort, of the dreamer's mind. So was the imprisonment between the horses, so was Maury's famous dream, and so was the experience of the baffled passenger. These may not have the merits of a story by Stevenson, but they are creations and they are creations because they are the products of an active mind—though that mind is just bursting into activity as it awakes from sleep.

The incoherence of dreams is referred by Bergson to the lack of adjustment between memory and sensation. In accordance with his opinion that the dreaming mind is relaxed and disinterested, he regards this adjustment as imperfect because the mind is not active enough to demand it. It may be doubted, as Greenwood remarks, whether incoherence is so marked a distinction between dreams and waking life as many writers regard it. Conversation notoriously tends to the desultory. Eccentricity is another matter and it is important to distinguish it from simple incoherence. Eccentric solutions of inadequately stated problems are natural enough and if dreams be the hurried affairs that our theory supposes they will naturally tend to the eccentric. A dreamer, conscious only of a suffocating feeling, who has to explain his sensation in a fraction of a second, and is perhaps partially bewildered by the sudden change from unconsciousness to consciousness, may be pardoned for the eccentric supposition

that a skeleton has gripped him. With a mere dribble of real data, the more energetically the mind bursts into activity, the more likely it is to supply eccentric contexts. Bergson himself regards memory as boiling over or gushing forth like steam released from a boiler during the passage of the dream, and this accords better with the total explosive character here assigned to the dream than with the relaxed condition of mind he elsewhere upholds. So far as incoherence occurs, and it does, of course, occur in dreams, a similar line of explanation will apply. Some dreams appear to be a series of guesses at the context of a sensation, and since the possible guesses may be almost limitless they may well represent a somewhat motley series. So far as there is failure of adjustment between memory and sensation this is more naturally ascribed to inadequacy of data than to the inertia of the mind. The dreaming mind has to guess and guessing means activity. Guesses, of course, unless they happen to be correct, will not always be precise adjustments of context to the data of sensation. In point of fact the adjustment is often perfectly precise in dreaming. It was perfectly precise in the skeleton dream, for the solution fitted the one definite fact realised by the dreamer. The error did not lie in the inference, which was sound on the data provided, sound at any rate as an imaginative possibility, but in the inadequate grasp of the total situation—an inadequacy readily explained by the mind not yet being in its normal waking attitude towards the world.

In one respect the skeleton dream betrayed an imperfect realisation of the possibilities of reality. The dreamer forgot that skeletons are no longer on the active list. It is scarcely possible to compare such dreams to plays of fancy and imagination, such as storytellers delight in. Dreams are accepted as realities and this seems to rule out such line of explanation. The mammoth horses might be ascribed to a naïve imagination but it is quite evident that dreaming often exhibits a dislocation of the sense of reality and possibility. This dislocation is frequently a contributory element to the eccentric element in dreaming. Its cause may be summed up as temporary forgetfulness. Maury forgot that the Revolution was over. Dr. Gregory's patient forgot that skeletons cannot clutch, and the writer seemed to forget that horses are smaller than elephants. Now in the unconsciousness of sleep the mind loses all sense of reality whatever. The dream passes as consciousness once more establishes a rapid contact with the world of reality—mental and material. There is more reason for surprise in our ability to come to our senses so quickly than in the odd lapses of memory manifested during the process. A hurried attempt at solution,

even when awake, may omit many otherwise obvious factors. Relatively permanent lapses of memory of a very extensive order may occur in waking consciousness. Shock often initiates such losses ; and, since waking is a recurrent form of mild psychical shock, it may well have the temporary effect of blinding the dreaming mind to possibilities or impossibilities. The suddenness of the dream limits the impressions it can receive from sources of sensation and it may well prevent, in a similar way, the full realisation of practical possibilities. It is only in this limited sense that there is any truth in Maury's view that dreams result from mental disorder. A mind deprived of its proper appreciation of possibilities and confined to a limited number of sensations will no doubt appear disordered, and the eccentricities of dreams reflect this condition. It may be noted that if the mind is thus disordered in its dreams and if dreaming consciousness extends over considerable periods of sleep, as some writers maintain, there is every likelihood that waking consciousness would strongly tend to be infected with irrationality. There can be little question that so long as dreams were not recognised as illusions by waking reflexion they did exert a marked perturbing influence on belief in possibilities. Primitive peoples usually regard their dreams as real events and dreams of the returning dead, to quote one instance, have undoubtedly helped to maintain the belief in resurrected spirits. Now the longer the period during which the dream consciousness maintains its grip, the more difficult it would be for the waking mind to resume its corrected version of the order of the world. A mind dreaming all night on the assumption that skeletons are animated would be likely to carry this belief into waking life. Dwelling upon ideas always tends to absorb the mind in them, and on the view that sleep is really a period of dream-consciousness it would seem difficult to explain the ease and rapidity with which waking consciousness asserts its conception of reality. The dreamer would be in the position of a waking mind subject to constant illusions for considerable periods—a condition very unfavourable for resuming rationality. It is different when we perceive that mental disorder is not so much the cause of dreaming as its effect, and temporary and fleeting like the dream itself. In breaking out of the unconsciousness of sleep the mind rapidly resumes, for the most part, its full contact with reality. During the establishment of this contact, as the mind springs forward in a sort of psychical explosion, some sensations may obtrude themselves and a hurried context is supplied to them from memory. There is a very active endeavour to order these sensations and memories, but in the rush and hurry there is,

or may be, for some dreams are rational enough, a temporary blindness to reasonable possibility. It may be that the memories and sensations will not adjust at all, and we awake without a dream or with impressions so vague that memory fails to carry them over into waking life. Bergson's failure of precision in adjustment is thus responsible for failure to dream, and the mind dreams to the extent that it succeeds in securing such adjustment. Frequently the mind succeeds in its effort of adjustment and the context derived from memory unites with the sensations to form a dream. Though really instantaneous, the pictured show spreads out in time under the intensity of the mind's action and the dreamer exaggerates its duration. Since the sudden rise of interest imparts reality to the dream this exaggeration is also assisted by the mind's endeavour, based on memory and association, to supply the appropriate time-setting—an endeavour that indicates an effort to accommodate to ordinary terms of reality. The dreaming consciousness may supply a context to its sensations that will satisfy the rationality of real life or it may fit its interpretation adequately to its limited external impressions but inadequately to reality as a whole. Sometimes it may be true that the only result is little more than a consciousness of confusion which may leave vague traces in memory, or none at all. But in the dream proper consciousness achieves a creation—a creation that bears all the marks of the active waking faculties of the mind, temporarily limited and moulded by the conditions of transition from unconsciousness to complete waking realisation.

It is possible that some dreams may be composed only of memory and be centrally initiated. The difficulty of proving that no sensation had access to the dreaming mind to provide peripheral stimulation is so great that such centrally initiated dreams must always remain conjectural. The "phosphenes," or sensations of light experienced when the eyes are closed, have been regarded by many as the sensational scaffolding on which the dream is built. This supposition, probably applicable to some dreams, shows how many and various may be the sources of sensation on which the dreaming mind may draw, and enforces caution in denying the action of any peripheral stimulus at all in connexion with any particular dream. Whether centrally initiated dreams occur or not it seems certain that some peripheral stimulus usually operates, if in such be included all stimuli due to some part of the body and perhaps even including disturbances in the brain itself, and that peripherally stimulated dreams are the most vivid experiences that beset the dreaming mind.

IV.—RETENTIVENESS AND DREAMS.

BY HENRY RUTGERS MARSHALL.

NOTHING goes farther to discredit a science than the inaccurate use of descriptive terms by those who devote themselves to its study ; and it is almost with a sense of shame that one notes the constantly recurring, and really shocking, carelessness with which many of the leading psychologists of our time employ the term memory, when they mean to refer to mere retentiveness. It is a fault common to German, French, English and American writers ; and instances are needless, for they will at once spring to the mind of the reader.

Retentiveness, as James Ward has said, is a physiological, as well as a psychological, fact. It is observed objectively, and only objectively. This is self-evident in relation to physiological retentiveness. It is not so clear in relation to psychological retentiveness ; but becomes so when we consider that a mental item is recognised as a revival—that is as the exemplification of retentiveness—only by recall of situations in the past which we consider objectively, and judge must have been accompanied by the mental item we now recognise to be revived.

But Memory, on the contrary, is observed subjectively, and only subjectively. It is our name for a process which yields the psychical state we call *a memory* ; which is a mental form that at times is given in connexion with revivals. A revival, if real, in past time, and *for me*, is a memory ; just as a mental item (usually a revival), if real, in future time, and *for me*, is an expectation.

This distinction between memory and retentiveness is especially significant in relation to the studies of our dream life¹ which have been of late brought to our attention so urgently by Freud and his followers. The method of psycho-analysis which they employ deals primarily with retentive-

¹ Bergson for instance tells us (*Dreams*, p. 31) that “it is memories, and only memories, which weave the web of our dreams”. What he thus calls memories are surely seldom more than revivals ; some of which we are able, after the fact, to translate into memories.

ness, and not with memory. Revivals, induced by artificial means, are indeed often by this method made to appear in the form of memories ; but this is by no means a certain indication that they point back to such actual occurrences in the past as they suggest. For we all realise how difficult it is for us in every-day life to avoid " illusions of memory " due to the artificial or fortuitous combination of revivals ; and the practice in the examination of witnesses in our law courts shows us how easy it is to produce these " illusions of memory " by suggestion ; a process to which the subjects treated by the psycho-analyst are especially susceptible.

In this study of this subject I shall ask the reader to review with me some more or less obvious facts in relation to retentiveness ; and to take with me a special view which I find helpful in the elucidation of these facts, and which I shall be compelled to state in a manner that may possibly appear dogmatic ; a risk that must be taken in the interest of brevity.

I.

1. It is generally agreed that our field of awareness corresponds with activities in some part of the brain system. This brain system is found to be a grand system of minor nerve systems ; each minor system being itself a system of nerve systems of a lower order ; until we reach the hypothetical simplest systems in which the elements are simple nerve cells.

2. The minor systems composing the brain system are of diverse orders ; some being more significant than others in relation to the activity of the brain system as a whole.

In normal active life one of the major nerve systems

1a. The field of awareness, as observable in reflexion is a grand system of minor psychic systems ; each minor psychic system being itself a system of psychic systems of a lower order, until we reach the hypothetical simplest systems in which the elements systematised are what we may call psychic elements, which however cannot be looked upon as psychic atoms in as much as they exist, as such, only in the fact that they are systematised.¹

2a. The minor psychic systems evidenced in reflexion are of diverse orders ; some being more significant than others in relation to the whole psychic system given in awareness.

In normal active life one of the major psychic sub-systems

¹ Cf. my *Consciousness*, p. 14 ff.

usually dominates and controls the other minor systems of the brain system. Its form determines the form of the brain system's activity in any given moment.

So far as the activities of the other minor systems are harmonious with the nature of those of the main control system, they are assimilated by, and emphasised by, this latter. It not only controls, but it selects.

It may be assumed that this same characteristic is given within each of the minor nerve systems composing the whole brain system; *i.e.* that in each of these minor nerve systems some one element (which is usually a minor nerve system of a lower order) is in control of the other elements of the system; and within it not only controls but selects.

3. In normal active waking life one great sub-system controls the whole brain system. It receives the resultants of stimulations from the environment, and more or less fully fixes the consequent reaction upon the environment through its influence upon the motor minor nerve systems

usually dominates and controls the others; its form determines the form of the awareness of any given moment.

So far as the other minor psychic systems are harmonious with those of the main control system they are assimilated by, and emphasised by, this latter. It not only controls, but it selects. It is in connexion with this main control system that the empirical ego¹ is developed. Its nature fixes the form of our individuality. In what follows I shall speak of this main psychic control system as the ego system.

There is clear evidence that this same control characteristic is given within each of the minor psychic systems forming the whole system of awareness; *i.e.* that in each of the minor psychic systems some one element (which is usually a minor psychic system of a lower order) is in control of the other elements of the system; and within it, not only controls, but selects.

3a. In normal waking life then the ego system controls the whole field of awareness. It receives the resultants of environmental influences in sensation and perception, and more or less fully fixes the forms of impulse, desire and volition in relation to reaction upon the environment.

¹ It is not the true Self, cf. my *Consciousness*, chap. iii.

which are, so to speak, its servants.

But the nature of this control system must vary from moment to moment as the activities of certain minor nerve systems of lower orders come into, or are excluded from, sympathetic correlation with it.

These variations of nature of the control system are usually slight.

But they may, at times, be of sufficient significance to alter very appreciably the nature of the control system.

Indeed in some cases the control may shift from one major sub-system to another.

These diverse major sub-systems are usually in more or less close correlation.

But in morbid cases they may be thrown altogether out of relation.

But the nature of this ego system must vary from moment to moment¹ as certain minor psychic systems of lower orders come into, or are excluded from, sympathetic correlation with it.

These variations of the nature of the ego system are usually slight; they are evidenced in diversity of what we call our moods.

But they may, at times, be of sufficient significance to alter very appreciably the nature of the ego system. An example of such appreciation we have in the distinction commonly made between one's "better self" and one's "worse self".

In some cases moreover the control may shift from one major psychic sub-system to another. I may for instance be guided by my "better self" on one day, and by my "worse self" on another.

These diverse ego systems are usually so closely related that we do not appreciate them as diverse existences, but as changes of form in a persistent entity.

But in morbid cases they may be so thoroughly thrown out of relation, as to be quite distinct from one another. Examples of such sharp distinction are given in cases of so-called "double personality".

¹ Cf. my *Consciousness*, chap. xxvi.

II.

Let us now turn to another consideration.

4. Whenever we observe what we call a special activity in a special part of the brain system, we are really dealing with an emphasis of activity within an all active system; *i.e.* with what, for convenience, we may call a neururgic emphasis.

5. Neururgic emphases are what they are because they stand out in contrast from a vast body of less markedly active parts, which latter form an undifferentiable mass of minor nerve activities.

6. The whole pulse of activity within the brain system may be said to display in any given moment a definite neururgic pattern; the form of this pattern being determined by the distribution of the neururgic emphases within the neururgic mass.

7. So long as there is life in the brain system; *i.e.* so long as it is active, it must

4a. The specific mental items in awareness never stand isolated; they are always felt to stand out in contrast with a something more of consciousness. These mental items are believed to correspond with what are usually called "special brain activities" but which are really merely neururgic emphases. They therefore may be assumed to be psychic emphases.¹

5a. For it is natural to assume that the "something more of consciousness" in contrast with which the mental items appear is an undifferentiable psychic mass corresponding with the neururgic mass in contrast with which the neururgic emphases appear; and this undifferentiable psychic mass we in fact find in what is usually referred to as "sub-consciousness," but which we may better call the psychic field of sub-awareness.

6a. Consciousness may be said to display in any given moment a definite mental pattern; the form of this pattern being determined by the distribution, so to speak, of the psychic emphases within the whole of the consciousness of the moment.

7a. So long as there is life, some form of consciousness exists. This consciousness

¹ Cf. my *Consciousness*, p. 17 ff.

display some form of neururgic pattern; although the neururgic emphases determining the form of this pattern may be at times exceedingly minute.

8. Both the neururgic emphases, and the neururgic mass are fundamentally of the same nature.

may under certain conditions display but a very ill-defined mental pattern; but we are justified in holding that we are conscious in some measure even in the deepest sleep.

8a. The field of psychic emphases making up the field of awareness, and the field of sub-awareness, must be held to be fundamentally of the same nature.

III.

With these considerations in view let us now turn to matters more obviously related to the subject before us.

9. Each stimulation of the brain system from without itself results in what we call a reaction, which involves a readjustment of its physical efficiencies;¹ and this is a permanent readjustment which inheres in the system, although it may be altered by later readjustments.

In fact, as the result of this readjustment of efficiencies the brain system has become a new system, capable of new forms of reaction, and incapable of exactly the forms possible before its stimulation.

9a. Each modification of consciousness, due directly or indirectly to environmental influences, results in a readjustment of its psychical efficiencies; and this is a permanent readjustment, which may indeed be altered by later readjustments, but which inheres in consciousness.

In fact, as the result of this readjustment of efficiencies, the psychic system becomes a new system, capable of displaying new forms, and incapable of displaying exactly the same forms that were given before the modification.

¹This permanency of readjustment is masked by the fact that parts of the brain system recuperate after reaction, and seem capable of repetition of identically the same reaction at a future time. It is difficult to see how it is possible for an organ to be, or to become after a reaction, exactly the same structurally that it was before; and that it has not regained, or does not regain, this capacity, but is changed in some way, is apparent in the fact that it finally wears out. But even if we cling to the view that in certain nerve cells no such permanent effect is produced by a given reaction, nevertheless we must agree that the effect of such reaction upon the highly complex brain system as a whole is a readjustment of efficiencies that cannot but have an influence upon its forms of reaction in the future.

This is the basis of neurological retentiveness, which is a special case of general physiological retentiveness.

There is no such thing as the "storage" in the brain system of stimulative effects; *i.e.*, effects that lie dormant until they may later be called upon to display themselves. The permanent re-adjustments may be specially located in particular minor nerve systems, but if these minor nerve systems are parts of the greater brain system, this whole brain system must be looked upon as having changed its form as the result of the stimulation and reaction.

10. Now evidently, in each moment, there must occur many re-adjustments of neurugic efficiencies in the brain system that lie entirely within the undifferentiable neurugic mass which forms a background against which the "special nerve activities," or neurugic emphases, are contrasted.

11. And the permanent re-adjustments of physical efficiencies, due to activities in the past, must in the main lie

This is the basis of psychological, or better psychical, retentiveness.

This conception is far removed from the conception of retentiveness as a kind of psychical storage, which figures so largely in current psychological thought.¹ Nor is it to be confused with the Herbartian conception of presentations that are looked upon as permanent psychic individual atoms which are always striving for recognition, although most of them are repressed; a conception which seems to dominate the writings of Freud, and which, in a modified form, appears in the thought of no less a master than Bergson.²

10a. In each moment there must occur many permanent re-adjustments of psychic efficiencies that lie entirely within the psychic field of sub-awareness because they are not sufficiently powerful to affect the psychic emphases within the field of awareness.

11a. The permanent re-adjustments of psychic efficiencies due to activities in the past, must in the main lie

¹ Cf. Bergson, *Dreams*, p. 33. "But behind the memories which are concerned in our occupations, and are recorded by means of it, there are others, thousands of others, stored below the scenes illuminated by consciousness."

² *Dreams*, p. 33 f. "The memories which are preserved in these obscure depths are there in the state of invisible phantoms. They aspire, perhaps, to the light, but they do not even try to rise to it; they know it is impossible, and that I, as a living and active being, have something else to do than to occupy myself with them."

within the neururgic mass, ever ready to display their nature by giving colour to certain of the neururgic emphases with which they are related.

within this field of psychic sub-awareness ; ever ready to display their nature, however, by giving colour to certain of the psychic emphases which are sufficiently emphatic to appear in the field of awareness.

When the resultants of these permanent re-adjustments of psychic efficiencies of the past do thus arise in the field of awareness we experience what we call a revival, whenever we have any objective evidence whatever of the existence of conditions which may have led to the re-adjustment of the psychic efficiencies they indicate.

A true memory is a special form developed in connexion with such a revival. It is a revival that is real, in past time, for me.

IV.

So much as to the nature of retentiveness. Let us now consider what light this study throws upon the nature of dreams.

12. In normal alert waking life one great major sub-system controls the brain system; but there exists always the possibility that some change of neururgic emphasis within some of the minor systems of a different order will affect the major sub-system sufficiently to result in new emphases within it.

12a. In normal alert waking life the ego system controls ; but there exists always the possibility that some change of psychic emphasis within some of the minor psychic systems within the field of sub-awareness will affect the ego system sufficiently to result in the appearance in awareness of this emphasis within the minor psychic system.

In thus appearing it passes what is usually called the "threshold of consciousness," which might more properly be called the "threshold of awareness within consciousness".

13. Different conditions of activity in the major nerve

13a. There are differences of threshold level; these be-

sub-system will determine what minor systems shall influence its form. And changes in these conditions of activity may occur from time to time.

14. If the activity of the major nerve sub-system is reduced, emphases within minor systems of a different order may yield neururgic emphases within it that would not otherwise appear.

15. And on the contrary increase of the activity of the major nerve sub-system may result in the disappearance of neururgic emphases that previously influenced its form.

ing determined by different conditions of what we may call psychic activity. And changes in these conditions will yield shiftings of threshold.

14a. A shifting of the threshold downward, so to speak, will result in the appearance within awareness of mental items that did not originally there appear; but which existed in the field of sub-awareness. Thus the resting soldier discovers indications of a wound which he did not observe in the excitement of battle.

15a. And on the contrary a shifting of the threshold upward, so to speak, will result in the disappearance from awareness,—the absorption into the field of sub-awareness,—of mental items that were originally in clear awareness.

As I am writing this I hear a passing newsboy shouting, "Extra. England declares war." This mental item, suddenly thrust into awareness, serves to start a new train of thought alongside of the one relative to my subject, and also to raise the threshold. I become excited as we say. For a moment I try to go on with my writing; but I find my thoughts in relation to the subject of dreams disconnected; that is to say only the most emphatic ones remain above the threshold; and these quickly fall back into the field of sub-awareness as I rush to buy the "Extra," and read the exciting news. When I have 'calmed down,' I proceed again with my writing, and the lost thought train reappears.

Now such a shifting upward of the threshold occurs, and often a very sudden and marked shifting, when we are aroused from sleep. All the psychic emphases of the sleep state tend to pass into the field of sub-awareness of the wak-

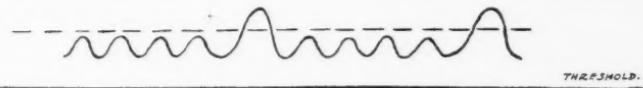
ing state ; that is to fall below the threshold of awareness of the wide-awake man.

But in what we call our dreams we catch for the moment in clear awareness certain mental items that were relatively emphatic in the psychic field during sleep, before the threshold was raised.

V.

In order that we may comprehend more fully the nature of dreams, let us consider certain points in relation to the fields of awareness and of sub-awareness within consciousness. As we have already noted, theory would suggest that both these fields are fundamentally of the same nature, and that this is true is evidenced in many ways. In the field of awareness we constantly appreciate streams of mental items resulting from redistributions of psychic efficiencies ; and it would seem probable that the same thing occurs in the field of sub-awareness, although these streams are not appreciated in awareness.

In awareness some of these streams flow to a definite end. We have a succession of mental items of moderate emphasis ending in one of very marked emphasis; e.g. two roads, one sunny, one shady, one sandy. LET US TAKE THE RIGHT-HAND ROAD. etc. etc. This we may picture as follows :—



Now if the threshold were raised, as indicated by the dotted line, all this might well be within the field of sub-awareness except the emphatic items, which would suddenly appear in awareness.

That such items do thus "pop into our heads" is of course clear ; and it is clear also that if we stop to inquire why they appear we are often able to drag out of the field of sub-awareness the unemphatic items of the stream that led up to the emphatic items.

That we have here an explanation of cases of so-called "unconscious cerebration" is evident.

If then such well-ordered streams may exist in the field of sub-awareness of waking life, they without doubt occasionally exist in the field of consciousness accompanying sleep, and occasionally we might expect upon awakening to catch

practically the whole of the stream; as in the case of Tartin's "Devil's Sonata" mentioned by Bergson.¹

But each mental stream given in awareness displays great variety in the degrees of emphasis of the component mental items; and if the streams within the field of sub-awareness display the same characteristic, we should naturally expect that the sudden shifting of threshold upon awakening would leave but a few of the more emphatic items subject to recall. This in itself would account in part for the disconnectedness and haphazardness of dreams.

But there is another reason why these characteristics of dreams should be usually so marked. For in sleep the full control of the ego system seems to be lacking,² and this would naturally result in a fortuitous development of lightly related items in minor psychic systems without the critical selection which is the characteristic of our rational life. That this is what happens in sleep is indicated by certain waking experiences accompanying lassitude which is allied with the sleep state, when we, more or less deliberately, "let ourselves go," as we say. The imagination then tends to run riot, and we experience mental streams so clearly allied with our dream streams that they are actually colloquially spoken of as 'day dreams'.

It thus appears that the nature of our dreams is clearly statable in terms of that part of consciousness of which we are aware. As Bergson³ well says, "The birth of a dream is then no mystery. It resembles the birth of all our perceptions. The mechanism of the dream is the same, in general, as that of normal perception." As in wide-awake life we build up in a flash the most complex of mental structures around some very simple percept,⁴ so we do in our dream life;⁵ this being describable in the one case as in the other as the sudden formation of a new mental pattern due to the emphasis of efficiencies already existing but unrecognised.

Some of our dreams are coherent and logical,⁶ others are not; and this is true also of the mental streams of waking life. In the main however our dreams are incoherent and non-logical, for the reasons given above.

¹ *Dreams*, p. 29 f.

² *Ibid.*, pp. 48, 50.

³ *Ibid.*, p. 37.

⁴ A few days ago on a railway train my companion asked me, "What is this station at which we are stopping?" and I instantly replied "Elizabeth". I then endeavoured to discover how I had reached this conclusion, and discovered that the only basis for my instantaneous reply had been the sight of the letter E which was all I could see of the name on the platform sign.

⁵ Cf. Bergson, *Dreams*, p. 16 ff.

⁶ *Ibid.*, p. 44.

That they often serve to revive mental streams that have long since faded into the body of sub-awareness¹ is merely proof of the fact that the re-adjustment of efficiencies that occurred in that dim past were permanent re-adjustments, as I have above stated.

That the dream consciousness is closely related to the consciousness of insanity² is natural in consideration of the fact that insanity is in the main evidenced by lack of control by the ego system, which we have seen is also a characteristic of the dream consciousness.

VI.

In closing we may consider briefly the relation of this view to two studies of our dream life that have been of late brought into prominence; *viz.* those of Bergson and Freud.

In Bergson's small book entitled *Dreams*,³ which is written with his usual grace and skill, we find him making the following points: "Dreams in general create nothing" (p. 29), it being "memories and only memories which weave the web of our dreams" (p. 31). "The memories that we evoke while waking . . . are always connected with present action" (p. 33). "But behind the memories which are concerned in our occupation . . . there are thousands of others stored below the scene illuminated by consciousness. . . . All our past life is there, preserved even to the most infinitesimal details, and . . . we forget nothing." These memories not concerned with our active life press forward into consciousness when I become *disinterested*. "They rush together to the door which has been left ajar" (p. 34). "The mechanism of the dream is the same, in general, as that of normal perception" (p. 37). "In the waking state . . . an operation is continually going on which is of quite the same nature as that of the dream." The difference is due to the lack of effort in the case of the dream (p. 46 ff.). This lack of effort explains the incoherence of dreams (p. 51).

¹ Cf. Bergson, *Matter and Memory*. "In certain dreams, and in certain somnambulistic states memories which we believed abolished appear with striking completeness; we live over again, in all their detail, forgotten scenes of childhood; we speak languages that we no longer remember to have learnt." Note here the obscurity due to the use of memory in place of revival. He actually speaks of memories no longer remembered.

² Cf. Carr, MIND, N.S., 91, p. 323.

³ This book lately published appeared in 1913 in the form of two articles translated from an article published by the author in 1901. But as the translator tells us this translation was revised by its author, it may be assumed to represent his present views.

and the abolition of the time sense in connexion with them (p. 52). "Preference is given by the dreamer to one memory image rather than to others" (p. 53); "the events which reappear by preference in the dream" being "those of which we have thought most distractedly" (p. 55).

Evidently the view I have above presented is in many respects harmonious with Bergson's conception as thus given; if we bear in mind Bergson's use of the term memory in place of revival. I too would hold that all the experiences of our past life are embedded, so to speak, in the consciousness of the moment. But, as I have noted above, I differ from him as to the mode of what he calls the preservation of all of our past life. He clings to the atomistic conception of storage. I would hold that as all experiences of the past have modified the nature of the conscious system, it in any moment must in a sense embody these experiences. The storage theory, even as modified by our author, falsifies the facts in leading us to think that these experiences of the past are revivable as such. There is every evidence that this is not the case. No revival or memory experience is ever identical with the experience that was originally given. All that we can say is that the re-distribution of efficiencies involved with a given experience is permanent, and may at times display itself in a form which will yield a new experience that is appreciated to be like one that has previously been given.

My view accords with Bergson's in holding that the difference between the dream life and the waking life is due to the fact that the control of the latter is lacking in the former. Under my view, as under his, the lack of this particular control does not indicate a distinction of kind between the dream life and the waking life. For although this particular control is lacking, some control is given in our dream life; as is shown in the very fact, acknowledged by him, that preference is "given by the dreamer to one memory image rather than others".

Turning now to Freud's theory¹ we note in the first place that he assumes a sharp distinction between consciousness, "fore-consciousness" and the unconscious. It will be apparent to the reader that I see no ground for making this distinction.

Stripped of all illustrative material, Freud's theory may be stated as follows. His main interest is centred upon the thesis that every dream is the fulfilment of an unconscious wish. He conceives of this wish as an active entity which

¹ *The Interpretation of Dreams.* The page numbers in the text will refer to this book. Cf. my review in *The Nation*, New York, 15th May, 1913.

strives to rise into full consciousness and to effect its realisation, this being thwarted by the action of another entity which he designates as the "censor". "The psychic activity in dream formation resolves itself into two functions—the provision of the dream thoughts" which are unconscious, "and the transformation of these into the dream content". This latter activity is "peculiar to dream life and characteristic of it, . . . something qualitatively altogether different from waking thought, and therefore not in any way comparable to it. It does not, in general, think, calculate, or judge at all, but limits itself to transforming. . . . This product, the dream, must at any cost be withdrawn from the censor" (p. 401 f.); this being accomplished by a variety of devices. The dream under his view would not occur unless it had a special function, which is thus described: "The dream has taken it upon itself to bring the liberated excitement of the unconscious back under the domination of the fore-conscious; it thus affords relief for the excitement of the unconscious, and acts as a safety-valve for the latter" (p. 457 f.).

In all this Freud gives especial prominence to the conception of "the censor" which is described as a psychic system, or clever psychic entity, which resists the "penetration to consciousness of the dream thoughts" (p. 409), and which our author likens (p. 419) "to the Russian newspaper censor on the frontier, who allows to fall into the hands of his protected readers only those foreign journals that have passed under the black pencil." When the censor fears that the dream thought will escape his vigilance he resorts to all sorts of artifices to forestall its persistency. He changes the dream so that it becomes repugnant rather than attractive (p. 135). He moulds the dream by distortion (p. 226); by displacement and condensation (p. 286 f.); by substitutions (p. 314); by the suppression and inversion of pleasure-pain and emotional reactions (p. 375); by making it appear foolish and disconnected (pp. 339 f., 419 f.); by forcing us to forget it upon awakening (p. 410 f.). Never, indeed, should we have a dream but for the fact that "the sleeping state makes dream formation possible by diminishing the endo-psychic factor" (p. 416).

It seems clear that the psychologist must see in this theory the building of a huge structure upon a very slim and unstable foundation. It is to be agreed, of course, that the psychic system of which we are aware in waking life, moulded as it has been, and is, by the social influences that surround us, prevents the fruition of desires, and frustrates the development of thought trains, which are inimical to our welfare as social

beings. But this acknowledgment does not warrant us in holding that this wide-awake consciousness is an entity so separate and diverse from the other psychic systems within us as our author would have us believe. All the evidence before us leads to the view that consciousness is fundamentally of the same nature through and through: that differences of systemic form occur within it; but that these are always in some measure correlated and are constantly more or less influential in determining the nature of that field of consciousness of which we are aware: this being quite compatible with the fact that, when we feel consciousness to be less than fully alert, prominence is gained by other psychic systems than that which is evidenced in moments of full alertness.

Passing over the final laboured and obscure elaboration of this censorship (p. 426 ff.), which points to another censor governing "the transition from the fore-conscious to the occupation of consciousness" (p. 490), we may turn to the main thesis, *viz.*, that "the content of the dream is the fulfilment of a wish; its motive is a wish" (p. 100). Mr. Carr has called attention¹ to a looseness of thought here. The most that Freud can claim is that we have in dreams what Mr. Carr calls the indulgence, rather than the fulfilment, of a wish.

The author's thesis in this particular is based upon his analysis of dream contents which, if allowed to develop, very frequently, if not usually, bring into prominence some wish which in the dream is felt to be realised. This fact none will deny, but question at once arises whether this is a special characteristic of dream consciousness. It surely is true that the development of the thoughts which arise in everyday wide-awake life also constantly yields wishes that are immediately followed by pictures of the consequences of their imagined fulfilment. In this characteristic of dream life we therefore find no unique psychic functioning.

But in dream life, as in wide-awake life, there are many cases where wishes are not observable. This fact, however, does not balk our theorist, who warns us that his "doctrine does not rest upon the acceptance of the manifest dream content, but has reference to the thought content which is found to lie behind the dream by the process of interpretation" (p. 114). And here he displays extraordinary ingenuity in ferreting out dream wishes where none at first appears, by methods which, by the way, would yield very similar results if applied to normal waking consciousness. In his other writings our author has given evidence of a morbid tendency

¹ MIND, N.S., 91, p. 333.

to over-emphasise the potency of erotic influences in all of experience, and in the field here considered the results of this preconception are conspicuous, leading him to improbable and revolting explanations. It is true that these influences are very powerful in our adult lives; it may be true also that they have been powerful in infantile life, and that their early activity may have resultants which are felt as we come to maturity. It is to be noted however that the traces thus left are likely to appear, not only in dream life, but also in wide-awake life when we allow our thoughts to flow without restriction. All this may be granted, however, without forcing us to follow our author in his insistence that practically all such dream wishes must have this erotic origin.

Finally, when we turn to our author's thesis that the dream has a special function, we find ourselves naturally led to assume a sceptical attitude by the fact that throughout the whole of his studies evidence constantly appears which leads us to note the closest of relations between our wide-awake and our dream consciousness. This our author accepts or denies as occasion requires. He agrees "that all the material composing the content of the dream in some way originates in experience" (p. 7); that "the experiences of the previous day furnish the immediate material for its content" (p. 192); that the dream thoughts "are usually found to be a complex of thoughts and memories of the most intricate possible construction, and to possess all the properties of the thought processes which are known to us from waking life" (p. 289); and even goes so far as to say that Aristotle was correct in holding that "the dream is a continuation of thinking in sleep" (p. 436). Yet, as we have seen above, he bases his theory upon the assumption that there is an activity in the transformation of dream thoughts into dream content which is "something qualitatively altogether different from waking thought, and therefore not in any way comparable to it"; and he finally asks us to believe that "it is quite impossible to explain the dream as a psychic process" (p. 405).

One cannot close the book here referred to without a sense of depression. The author has won distinction in connexion with his use of the psycho-analytic method, and is believed to have done great service in his special field by a large group of his professional brethren, not all of whom, however, agree that his theoretical positions are valid. But his mode of thought as displayed in this book is indicative of a total lack of the characteristics which lead to scientific advance. In it he portrays himself as one whose scientific judgment cannot be trusted, and this must lead even his most enthusiastic fol-

lowers to question whether they are not over-estimating the value of his work in other directions. He presents an example of the dangers connected with the extreme specialisation characteristic of the educational systems of our day, which fails to strengthen the sense of logical values so important to the development of a true science. Their appreciation would have led our author to use caution in the adoption of doubtful hypotheses, and to hesitate to take the attitude of a special pleader who emphasises all evidence favourable to the hypothesis adopted, and minimises, if he does not overlook entirely, all evidence that is unfavourable. In my view while the value of his practical work in relation to hysteria and kindred problems may be long remembered, his theory of dreams will soon be laid aside as untenable, and forgotten.

V.—DISCUSSION.

THE NATURE AND GEOMETRY OF SPACE.

PRIOR to any consideration of the special geometrical character of space is of course the problem of its nature in itself, and without attempting to carry further the question whether space be Euclidean or non-Euclidean, I should like to consider Mr. Broad's conclusions¹ in their bearing upon the more general subject.

Mr. Broad begins by endorsing the view which is advanced, though with varying detail, by several able thinkers, that "in a certain sense it is true that each of us has a private space peculiar to himself".² But from any such initial standpoint there are bound to follow, in my opinion, developments fatal to any satisfactory theory of space as a constituent of objective reality; and the difficulties which arise from the simple phenomenon that "what I see and what you see at the same moment when we say that we are looking at the same body will have slightly different shapes,"³ taken (as this usually is) in connexion with the facts of hallucinations and illusions in general, always appear to me to be satisfactorily solved by the application, in each case, of the principle that all appearance is partial reality,⁴ instead of by the formulation of "private space" theories which create in the end difficulties more formidable than they appear to remove. We have an instance of this, I think, when we proceed to Mr. Broad's treatment of the relations between matter and space. If it be true, *i.e.* that "in a certain sense, each of us has a private space"; and if it be also true that "pieces of matter are related in a certain peculiar way to points of space";⁵ then it would seem to follow that each "private" space must contain its own "private" matter,⁶ and

¹ "Is Our Space Euclidean?" *MIND*, October 1915, p. 464.

² *Loc. cit.*, p. 464.

³ *Ibid.*, p. 474.

⁴ Or, in other words, "everything is real, so long as you do not take it for more than it is" (*Bosanquet, Principle of Individuality*, p. 240); if, *i.e.*, you recognise that its reality, though undeniable so far as it goes, must be carried further and supplemented from regions outside itself.

⁵ *MIND*, *loc. cit.*, p. 466.

⁶ If it be replied that matter fills only objective—*i.e.*, non-private—space, still private space is never empty, but has always some content which, whatever its nature be, has relations both to its own containing private space and also to matter proper;—constitutes, in short, with these a subordinate "world".

that both must be in some relation to "private" time; we cannot, in short, restrict this "privacy" (as its advocates usually, but without any reason given, think it sufficient to do) to space, because the theory, when given its proper development, results in endowing each of us with a "private" world,¹—and the fitting of these innumerable worlds into the real universe constitutes a fascinating zagzag puzzle for philosophers; but Mr. Broad we find later qualifies his position by the assertion that "we do not know whether such (private perceptual) spaces be possible".²

If, however, we assume their possibility we are at once faced by the still more fundamental difficulty of effecting any transition from such private spaces³ to "a space so constructed as to enable us to deal with the data of all senses of all men".⁴ Let it be admitted that:—

- (a) "No kind of space can be perceived by the senses";⁵
- (b) That the "spatial relations of perceived objects" cannot "*in any sense* be supplied by our minds";⁶
- (c) And that nevertheless space (*i.e.* as objective and non-private) is "something that we add to our experience";⁶

then the question arises, what grounds do we possess for our knowledge that this space, which *I* add to *my* experience, is identical with the space that you (and others) add to your (and their) experience?

Why, if perceptual spaces are private, should not thought-constructed spaces be private also?⁷ To reply that concepts are in their nature general or universal is manifestly to disguise question-begging as generalisation; but if constructed spaces (or worlds) are "private" what then becomes of the objective real world? And it will ultimately be found, I think, that "private" experience, assumed as a basis, constitutes an impenetrable ring-fence about the experient debarring him eternally from objective knowledge.

Let it however be granted further, that this transition to the objective world can be effected, the actual mode being here disregarded. Still Mr. Broad's standpoint appears to be far from self-consistent; he regards space as something "added to our experience and not something found by us";⁸ while at the same time the "spatial relations of perceived objects . . . are found and not made by us";⁸ . . . "touch and sight make us aware of extended wholes in which we can distinguish parts in spatial relations";⁹ nevertheless, "the object of sight . . . touch . . . are not themselves

¹ Of course the relation of each of us to the real universe—the relation in general *i.e.* of the individual to the whole—is "private," if we care to adopt that adjective; but the two cases are obviously quite different.

² *Loc. cit.*, p. 473. ³ If not worlds. ⁴ *Loc. cit.*, p. 473.

⁵ *Ibid.*, p. 472. My italics.

⁶ The popular opinion that our "thoughts" are essentially private shows that the contrary view requires at least some argument.

⁷ *Loc. cit.*, p. 471.

⁸ *Ibid.*, p. 472.

spaces".¹ "Space," then, is "added and not found," while "spatial relations" are "found and not made"; "spatial relations" again are distinguished through touch and sight, but "space" is not "the object of sight or touch". But are not these distinctions, between space on the one hand, and spatial relations on the other, far too absolute? Do not the two terms mutually involve and interpret each other in such a way as to prevent us regarding one as "found" while the other is "added"—one as always, but the other never, the object of sight and touch?

Are we not, in arguing along these lines, making intellectual progress saltatory instead of evolutionary—unduly aggrandising the mind's more abstract activities at the expense of concrete experience, and proclaiming between these an ungrounded divorce? That the content of perception ("spatial relations") and the object of thought ("space") have some common real element is surely involved in the very terms we use; and though a distinction is necessary between the object of thought and the content of perception still this appears to mean no more than that (in the case before us) the former is an abstraction from the latter, and (as such) farther removed from reality; and if then we regard space as at all a real² element in the real world, it is to the content of perception (where it is found together with other contents) that we ought primarily to apply the term.

For otherwise the general line of argument which is here employed by Mr. Broad ultimately involves a serious dilemma with regard to the relations between thought and reality. If we regard space as "rather a bizarre interpretation the elements of which are supplied by ourselves,"³ we must logically take the same view of force, time, mass, truth, duty, and every other ultimate scientific and moral concept alike; the obvious result then being that reality becomes a noumenal outcast rigidly excluded from the select circle of our intellectual categories; thought is sharply cut off from reality, for its products are frankly unreal⁴—are mere "bizarre interpretations"; and our only way to avoid this result is to reinstate these as real elements of the real world, within the content of concrete experience as that exists, complexly but not therefore confusedly, in actual perception. Reality, *i.e.* in the first case, is divorced from thought, while in the second it merely maintains itself in advance of experience; in the one, thought turns farther and farther away from reality—in the other experience pursues after reality, though at a distance.

But this crude content of perception, it may be replied, is so manifestly unsatisfactory that we must supplement it, even if we

¹ *Loc. cit.*, p. 472.

² As real, *i.e.* as any element can be.

³ *Ibid.*, p. 472.

⁴ "Physical space and physical matter are, so far as we know, just parameters which are introduced" (p. 475); their introduction having merely a pragmatic justification.

may not supplant it, by the results of thought; no mode of concrete experience can give us geometrical space, whether Euclidean or non-Euclidean, or any relation between space and time; and yet some type of geometrical space, and some relation between space and time are necessary and must be real. Therefore, proceeds Mr. Broad's argument, "By our space, we mean the space of physics which has been constructed";¹ . . . a "bizarre interpretation," "something that we add to our experience, not something found by us".

The question as to the justification which this general type of argument possesses is crucial for the philosophy of knowledge; and it seems to me that the prevalent use of "space" and its allied scientific and philosophic terms always in the sense of, as such, excluding the contents of perception, is the result of confusing real elements in the real perceived world with the summarised body of judgments about these elements—is the result, in short, of failing to distinguish between the connotation of terms and their denotation. Space, *i.e.* as such, is a real constituent of the real world; "geometrical space" or "physical space" (or any similar term) is, viewed from one side, the symbol of a body (variable in detail for each individual) of judgments about this real—the symbol of a system of ideal qualifications of this constituent of reality;² "physical space" *e.g.* at the same time denotes an element in the reality we perceive, and connotes the abstract qualities which reflexion distinguishes within this element, which distinction and relation it expresses in a system of judgments; and to restrict "physical space" to this connotation, and so to sever connotation from denotation, is to destroy both. To confine "physical space" to the product of thought—to the element we add to our experience—is in the end to deprive the term itself of all meaning; for define "physical space" how you may—in terms of points, or straight lines, or properties of parallels—as Euclidean or non-Euclidean—still unless these definitive terms have some reference ultimately to the content of perceptual experience, they become wholly devoid of meaning.

This appears to be true from Mr. Broad's own account of space as "something added by us to the experienced facts";³ for what is the origin of this "something added"? If not in and from the "experienced facts" themselves, it can only be the pure product of thought; and then we have the dilemma—either our thought addition must be unreal; or, if real, then thought can produce reality spontaneously.

It may be replied—Granting that space is a real element given

¹ *Loc. cit.*, p. 474.

² It would be truer to say that even the name "space" is itself a more or less rudimentary qualification of reality, for judgment begins with the use of a name, the only alternative being eternal dumbness.

³ *Loc. cit.*, pp. 470, 471.

in perception, still it must be either Euclidean or non-Euclidean ; it cannot be both, and yet how is it possible that any essential character of reality should be doubtful ? This question, natural and puzzling enough, arises from the unconscious confusion already referred to, between the real entity denoted by "space"¹ and the system of judgments which we come to make about this entity, which judgment-system at last becomes automatically implied by and summarised in the term "space"² itself ;³ and when we thus distinguish the entity denoted by "space" from the judgment-system connoted by "space," it is easy to see that any uncertainty about the fundamental nature of space concerns, not this real nature itself, but merely the truth of the judgment-system which we hold that the term space implies ; and any such judgment-system may, obviously, be false ; "geometrical space" then—i.e. the judgments this term implies—may be Euclidean in one century, and non-Euclidean in the next ; just as "physical light" was once corpuscular, then undulatory, and again electro-magnetic. But all this merely means that our system of judgments about space (and light) alter in content and character with the development of our knowledge ; it does not mean either that space and light are, as such, never given in perception, or that the fundamental nature of these reals as such is unfixed and uncertain.

With reference, finally, to the distinction between matter and space, it appears to me that Mr. Broad introduces what is really a self-contradictory concept. From the principle that "pieces of matter are related . . . to points of space"⁴ Mr. Broad proceeds at once to the idea of "matter divided up into material unextended points,"⁴ distinguishing these "material points" from spatial. But is not this idea self-contradictory ? A point, using the term with the strictness necessary to the argument, cannot be at once material, and unextended ; for the material is, by definition, extended. Of course, "point" has a variety of meanings ; but in considering the relation between matter and space its meaning must remain unaltered, and if we begin with points of space, which by definition have no extension, we cannot go on to use point, in this same sense, and speak of "material unextended points," because "material" and "unextended," again by definition, exclude each other—we cannot apply both, at once, to the same entity. If therefore, we employ "material point" at all, it can be, I think, in a metaphorical sense only, just as we may speak *e.g.* of "the point of an argument," or "the good points of a horse".

If on the contrary, "point" be used with its proper literalness

¹ Or "physical—geometrical—space"—the particular term chosen is immaterial to the argument.

² See last note.

³ It may be replied that attributes, not judgments, are thus connoted ; but then attribution is always implicit judgment even when not explicit.

⁴ *Loc. cit.*, p. 466.

the distinction between "material point" and "point of space" breaks down altogether;¹ and if, again, "material point" = some portion of matter, however small, then we have the whole problem of material extension afresh on our hands, since the space relation of an atom is just as difficult a question as that of the solar system.

¹ Further in this connexion, can we regard a straight line as "a certain selection of the points . . . related to each other in a certain way" (*loc. cit.*, p. 465)? Can any selection of (unextended) points, i.e., be an (extended) straight line? The Euclidean straight line is not a relation between points; even if we say a moving point "produces" a line, do we mean more than that a point moves along a line? This apparent hypercriticism appears to me to involve the principle that though we can, from concrete space, abstract points, lines, planes, etc., we cannot reverse this process—cannot i.e. from points, lines, planes, etc., construct concrete space.

J. E. TURNER.

VI.—CRITICAL NOTICES.

The Greek Philosophers. By A. W. BENN. Second edition, corrected and partly rewritten. London: Smith, Elder & Co, 1914. Pp. xxxv, 619.¹

It would not be becoming, even if considerations of space made it possible, to review in MIND the second edition of Dr. Benn's well-known work in great detail. The writer's principal views, it may fairly be presumed, are already known and familiar to most English-reading students of Greek philosophical thought, and most of the grounds which could be urged for agreement or disagreement with them are likewise not new. As far as the greater part of the volume is concerned, therefore, I desire simply to congratulate Dr. Benn on the appearance of his book in a one-volume edition and to express my appreciation of his long devotion to Hellenic studies and of the service he has for years done to the cause of Hellenism by his unflagging industry. I am all the more pleased to have this opportunity of doing so that I am forced in very many ways to dissent from Dr. Benn's conclusions on the most important part of the whole subject, the interpretation of the Socratic and Platonic philosophies. Disagreement about conclusions fortunately need not hinder any one from admiring the vigour with which Dr. Benn champions his cause and the success with which he avoids that worst of sins in a historian of thought, dulness. Whether one agrees with him or not, he is always interesting, and for my own part, even where I believe his main conclusions to be most mistaken, I always find that he has something to say that really throws light on the issues under consideration. And, if Dr. Benn will allow me to say so, I do not welcome any really fresh and interesting discussion of these questions the less because I believe it to be mistaken in its results. To the real lover of Socrates and Plato the thing of first moment is not that his own views about them should be preached, but the thinking men should be stimulated to study Greek philosophy for themselves. The "right" views may be trusted to make headway by their own inherent rightness, if only the interest in the study is kept alive. And

¹ The following pages were written before the announcement of Dr. Benn's lamented death, but it has been thought best to let them stand without modification. The writer desires to add that his disagreement with many of Dr. Benn's results has never lessened his admiration for Dr. Benn's whole-hearted devotion to Greek Philosophy.

whether Dr. Benn is right or wrong in his views, he always contrives to be interesting and provocative of thought.

The features in the present edition to which the *Preface* calls special attention as new are these, an additional note on the circumstances and significance of the trial of Socrates, a chapter on the Metaphysics of Plato, and the discussion of the eternally perplexing Aristotelian doctrine of the *intellectus agens*. Dr. Benn expresses some apprehension that the Plato chapter may be treated by his readers with insufficient attention on the ground that it is not the work of a "Professor". I think he may feel quite at his ease about that matter. It is just to writers like Dr. Benn whose freedom from the grind of a profession enables them to devote their whole energy to the study of their chosen problems that those of us who are engaged in the regular work of teaching are most glad to look for instruction and guidance. Perhaps I may add that for my own part the one man from whose scholarship, erudition, and critical common sense I am conscious of having learned more about Plato than, I might almost say, from all the professors of the nineteenth century put together, George Grote, was no "Professor" either. I will now try to say something about the specially new portions of Dr. Benn's second edition.

As regards the trial and condemnation of Socrates, Dr. Benn has several pages of rather severe castigation of Profs. Bury, Gilbert Murray and myself, whom he describes as apologists for "the vilest attack on reason Europe has ever seen". I can speak, of course, only for myself, and ought perhaps to add that while I believe myself to be in the main in full accord with Prof. Bury, I should not care to defend some of the rhetoric which Dr. Benn quotes from Prof. Murray. Speaking for myself, I can only say that Dr. Benn appears to have mistaken a position which I believed myself to have made quite plain in my discussion of the *doxéa* of Socrates. My offence apparently consists in holding that Socrates was technically guilty of the charges brought against him, and that there is no reason to suppose that his prosecutors were actuated by any but public-spirited motives. More precisely, I hold that what was meant by the charge of "corrupting the young" was inspiring young friends with ideas incompatible with the ideals of the Athenian democracy, and that there can be little doubt that of this offence the friend of Critias and Charmides was guilty. I do not regard this as any slur on the glorious memory of Socrates; I should rather consider it a fault in him if his influence had not made his young friends dissatisfied with the democracy which massacred the Melians and ruined itself in the attempt to enslave Sicily. But I do think it amounted to what earnest democrats might reasonably regard as unpatriotic conduct, and that there is no need to look for mean personal motives to explain why the democrats determined to drive Socrates from Athens. (We must remember that they can hardly have meant to take his

life. They must have expected that he would take the usual course of leaving Athens and allowing the case to go against him by default, or that, if he stood his trial and was convicted, he would propose an alternative penalty which would satisfy the dicasts.)

To his everlasting honour Socrates chose to die, as he had lived, in the service of "the God"; that, however, is no proof that the democratic leaders were not equally honest in their devotion to the good of the city as they understood it, or that they were wrong in thinking the influence of Socrates dangerous from their standpoint. (Dr. Benn perhaps forgets, what the dicasts would remember, that Socrates was directly responsible for persuading Charmides to enter politics. At least, so Xenophon says, and Dr. Benn, unlike myself, believes that we must accept as true everything that Xenophon tells us about Socrates.)

Still less do I think it just to bring the charge of religious intolerance against the Athenians in general. Dr. Benn cites the cases of Anaxagoras, Diagoras, Protagoras and Aristotle. But it is certain that the real grounds for the prosecution of Anaxagoras and Aristotle were purely political, Diagoras was condemned not for his opinions, but, like Alcibiades, for "profaning the mysteries," (a very different thing), and Dr. Benn must know that there are the gravest reasons for doubting whether Protagoras was ever prosecuted at all. It has been said, and Dr. Benn repeats it, that Athens was the only city where Socrates would have run any risks. This is, I believe, a mistake. There is no reason to think that Socrates did run any risk before the reign of terror in 404-403, and I think it may fairly be inferred that if Socrates had not been the friend of Critias and Charmides, and had not held aloof from the democrats who withdrew to the Peiraeus, he would have run none after that year.

I am glad now to be able to claim the authority of Prof. Burnet for a view which in all essentials agrees with my own. In fact I might almost claim Dr. Benn's. For he says admirably that Socrates was "impeached as a philosopher, defended himself as a philosopher, and was condemned to death as a philosopher". Exactly, and Plato says the same thing in the *Gorgias*. φιλοσοφία and the δῆμος of the Athenians were two masters whom no man could serve at once. But the difficulty lay, as Plato makes plain, in the incompatibility of two political ideals.

A word or two about Dr. Benn's chapter on the Metaphysics of Plato. I find it difficult to ascertain the central idea underlying the discussion, and must therefore avoid premature criticism of special points. And I should like to say that I agree with Dr. Benn in regarding the *Parmenides* as the beginning of a great constructive development, though not altogether with his interpretation of the lines on which the development proceeds. I think he overlooks the all-important point, properly insisted on by Prof.

Burnet, that the real difficulty forced on us by the *Parmenides* concerns not the reality of the $\epsilon\ddot{\alpha}\eta$, but the reality of the sensible world. And I feel sure that it is impossible to do justice to the Platonic doctrine without recognising the fundamental importance of the natural theology of the *Laws* and of the Platonic philosophy of number so often referred to by Aristotle. Dr. Benn, in my judgment, makes too exclusive a use of the *Timaeus* and nothing like an adequate use of the *Laws* and *Philebus* and the reports of Aristotle. Hence, while I agree with him in thinking that the doctrine of " Ideas," *in the shape in which we know it from the Phaedo*, does not appear in the specifically Platonic philosophy to which the *Parmenides* points the way, and again that a new stress on the value of the sensible is a prominent feature of Plato's later dialogues, I do not think Dr. Benn has succeeded in making it clear to himself what the positive doctrines of Plato were. He actually asserts his conviction that the theology of the *Laws* was not seriously believed in by Plato himself, and even charges the philosopher with proposing to persecute for a faith in God and immortality which he really did not hold. This is a very serious accusation indeed, and we have a right to require very convincing proof before we bring it against a man like Plato. Dr. Benn's only attempt to prove the point is an appeal to the authority of Teichmüller. Against such a mere *argumentum ad verecundiam* it should be sufficient to reply that the language in which Plato sets forth his doctrine of Theism has every mark of fervent conviction. If the doctrines of *Laws X* were really not held by Plato, then all I can say is that we can have no confidence that anything said in any Platonic work does represent the writer's convictions, and shall have to give up any attempt to explain what Plato's philosophy was. The *Laws*, for example, is just as emphatic in its Theism as the *Phaedo* in its assertion of the doctrine of $\epsilon\ddot{\alpha}\eta$. With what right does Dr. Benn assume that Plato meant what he said in the one case if he did not mean it in the other? So, Dr. Benn regards the criticism of democracy in the *Gorgias* and *Republic* as proof that Plato hated democracy and all its ways; yet this criticism is not one whit more impassioned than the critique of atheism in the *Laws*, and the latter, moreover, is not even guarded by being put into the mouth of a *dramatis persona* for whose utterances the writer might not be fully responsible. It comes from an anonymous Athenian "stranger" who is plainly meant as a transparent disguise for Plato himself. There is no German Professor whose dicta can justify the application of principles of exegesis which leave us free at pleasure to treat any utterance of Plato whatsoever as insincere. Again, Dr. Benn simply ignores the whole Platonic doctrine of Number, (in spite of its enormous influence on subsequent thought), on the plea that Aristotle's unfairness in his criticisms of the "good of Plato" makes his testimony worthless. But the question is not really

about the value of Aristotle's *criticisms*, but about the worth of his *statements*. That Aristotle's criticisms often show imperfect understanding of Plato's philosophy, especially on its mathematical side, is notorious; it does not follow that his express and repeated assertions as to formulae which he must have heard direct from Plato's lips can be set aside. Thus, it is a notorious blunder in his criticisms of Plato that he habitually argues as if the "Great and Small" were the same thing as the number 2. Criticisms based on such a confusion are worthless, but Aristotle must have known for certain whether or not Plato said that the "Forms" were a "mixture" of the "One" and the "Great-and-small," just as he must have known whether or not Plato believed in the earth's revolution. It is a weakness, again, to have made no attempt to discover how far the utterances of the *Timaeus* have been coloured by the choice of a fifth-century Pythagorean as the main speaker. The dialogue is remarkable for the way in which Timaeus takes refuge in pregnant hints just at the points where we seem on the verge of reaching what is most fundamental. For example, we are never told in the dialogue what the ultimate *ἀρχαί* of the physical world are. A mere hint is dropped that there is something even more ultimate than the elementary triangles about which the speaker could say more if he chose, but that is all. Apparently the device is adopted merely to avoid the anachronism of putting the Platonic philosophy of Number into the mouth of an older contemporary of Socrates. But whatever the explanation may be, the existence of such significant hints shows that we cannot treat the *Timaeus* by itself as a complete exposition of the views which finally commended themselves to Plato even in the sphere of physics and astronomy. Altogether I think Dr. Benn has allowed his interest in Plato as a moralist and social theorist to blind him to the immense importance of Plato and his associates in the history of mathematics and astronomy. (Though this preoccupation with the practical side of Platonism ought to have led Dr. Benn at least to pay much more attention to the *Laws* and relatively less to the *Republic* in his exposition of Plato's theories of education and government. As the ancients knew well, the *Republic* is far from being the last word of Plato on any of the subjects of which it treats.)¹

¹ I may take this opportunity of calling attention to a striking recent example of the unjustifiable neglect of the *Laws* by English scholars. The treatise *de M undo* ends with a quotation from "the admirable Plato" intended to show that "the Fates" are identical with God (*de Mundo* 401b 24-29). The words are, except for one or two trifling variants, taken *verbatim* from the famous text, *Laws* 715e-716a, a passage constantly quoted by later Platonists. Yet the translator of the *de Mundo* in the Oxford *Aristotle* commits the absurdity of saying in a note that "the reference appears to be" to the myth of Er, which contains nothing like them. Had Mr. Forster never read the *Laws*? And, by the way, can we infer from his silence that he has never seen Apuleius' Latin translation of the *de Mundo* itself?

Incidentally I would suggest that some of Dr. Benn's views about the order of the dialogues seem to me arbitrary, and I am not sure that they have not unduly affected his estimate of their value. I gather e.g. that he regards the *Philebus* as earlier than the *Timaeus*, and this may perhaps explain the inadequacy of his treatment of the former; I think also that the view that the *Laws* is the latest of Plato's works has played some part in leading him to underestimate its importance. Now I do not see on what evidence it is possible to decide whether the *Timaeus* is an earlier or a later work than the *Philebus*. For a good reason linguistic statistics can hardly help us much in the matter, and there does not seem to be any other ground to go upon. Bäumker, whose judgments in such matters are those of a very competent and very careful critic, has argued for regarding the *Philebus* as the later of the two, and it certainly contains some developments of which *Timaeus* is only allowed to drop darkling hints. And as to the *Laws*, though it may very well be true that Plato was still engaged on it when he died, (as a tradition of later antiquity recorded), and that it is thus in one sense his latest work, the composition must obviously have occupied a great many years, and there seems good reason to think, with Eduard Meyer, that the book contains materials actually draughted by Plato, when he was engaged with Dionysius II. on a plan for the reform of the Sicilian cities rather more than twenty years before his death. However that may be, it is certain that the *Laws* can neither have been planned nor executed in the few last years of an old man's life, and it cannot therefore be disregarded as a product of exhausted senility.

Still, when all is said, I believe Dr. Benn is really "on the track" which leads to Plato's central thought in much that he says of the *Parmenides*. Only I feel sure that if he is to "hunt down" his quarry, he will have, like Socrates and Protarchus, to rely on three "Forms" and not on one. The *Laws* and *Philebus* will have to be utilised as well as the *Timaeus*. But I hasten to say that I now see more fully than I did in the days of an old controversy in MIND which Dr. Benn has thought it worth while to recall that there is a real difference between the doctrine of the *Phaedo* and that pointed to by the *Parmenides* and the dialogues which follow it, and that in particular an appeal on my part to the *Timaeus*, mentioned in the second footnote to page 227, was vitiated by my failure to recognise that the speaker in the passage quoted is not Plato but Timaeus.

I may perhaps add one or two other remarks on some points of Dr. Benn's exposition. I think it a mistake to attach as much importance as he does to the famous "Form of the Good" of the *Republic*. I cannot think that Plato's mind was quite so preoccupied with that as Dr. Benn does. As Jowett long ago observed, the "Form of the Good" is never mentioned at all in Plato except in the one passage of the *Republic*. The "Good" of the *Philebus* and of the

famous "unwritten lecture" is quite another thing. Hence I should infer that if the *Republic* passage represents a view which Plato himself ever held, he at any rate did not acquiesce in it long, and the real development of his thought was on quite different lines. The fairly numerous references in contemporary comic poets to the Πλάτωνος ἀγαθὸν as a type of the obscure seem to me to refer to the speculations dealt with in the lecture on "the good" and not to the *Republic* passage at all; (the fundamental difference is that the "Good of Plato," as we learn from Aristotle, and can also see from the *Philebus*, was not a "Form" at all, but one constituent of the "Form-Numbers"). Nor again can it be correct to regard the God of the *Timaeus*, as Dr. Benn seems to do, as a "mythical" symbol of "the Good". For "the Good" is either (as in the *Republic* passage) a "Form," or, as in the doctrine Aristotle heard from Plato, a constituent in the "Forms," but God is, as we see from the *Laws*, a "soul". And the absolute distinction between souls and Forms is vital to Plato's philosophy, as the distinction between truths and the minds which know the truths must be for any philosophy. Altogether I am puzzled to know on what principle Dr. Benn determines what in the *Timaeus* is symbol and what is symbolised. He regards the Creator as a symbol, but credits Plato quite seriously with the belief that spaces can move about, and even reads him a lesson for making what, as Dr. Benn himself sees, is a purely fanciful and humorous use of Alcmaeon of Crotona's theories about the "circles in the head". Dr. Benn forgets that Plato is putting his discourse into the mouth of a Pythagorean of the fifth century, who is obviously meant to be as old a man as Socrates, if not older, and that in his mouth nothing could be more appropriate than such a reminiscence. Thus what is to Plato only a playful fancy would be quite appropriate as a serious utterance on the part of Timaeus.

Much of what Dr. Benn says about the *Sophistes* seems to me at once important and very happily put. But I do not fully understand his view that in these later dialogues Plato replaces the Form of Good by the notion of Identity as "the starting-point of his dialectical hierarchy". Surely Identity and Diversity are treated as correlatives and as standing at the same logical level in the *Sophistes* and all the later dialogues. There are five μέγατα γένη, not one, in the *Sophistes*, and, on Dr. Benn's own showing, Diversity is as much a constituent of Being as Identity. I think also there is a grave confusion of thought in the statement that Identity is "distinctly qualified as non-existent, or, as we should say, 'purely ideal,' and realised only in combinations where its purity is lost" (p. 210). Or rather, I should say, there appear to be several confusions. What Plato says is not that Identity is "non-existent," but that it is not the same as Being, i.e. that is to say "X is" is not the same as to say "X is identical with something". The question of the distinction between what merely is and what exists does not really arise, since Being is no more an existent

than Identity. And the statement that "there is a plane curve to constant curvature" is as truly different from any assertion of Identity as the statement "There is a writer called Dr. Benn," though Dr. Benn is an existent and "the circle" is not. And it seems a further confusion to say that Identity is only realised in combinations in which its purity is lost. If this means anything it seems to mean that no assertion of an identity is really true. But Plato at least never says this, and it also seems to be false. What Plato says is (*a*) that Identity is different from Difference, from Motion, etc., and (*b*) that both Identity and Difference can be asserted about any term. But he does not say anything from which it can be inferred that such a proposition as "The general who won the battle of Pharsalia is the same person who was killed by Brutus and Cassius" is "partially false". There have been and are logicians who maintain this, but Plato is not among them. If all that is meant is that both Identity and Diversity can be asserted about any term we please, it is a very odd way of expressing this to talk of the "purity" of Identity being "lost".

I should next speak of Dr. Benn's contribution to the most perplexing of all Aristotelian problems, the doctrine of the imperishable *intellectus agens*. But before I do so, I must make one remark on a point of astronomical theory in which Dr. Benn falls into a common but most unfortunate error. Speaking in passing (p. 267, note 1) of the Platonic astronomy, Dr. Benn expresses a doubt whether Plato recognised the revolution of the earth, adding the remark (after Grote) that if he did, he overlooked the inconsistency between this admission and the theory of the revolution of the "celestial spheres"; and making the curious suggestion that the revolution of the earth was probably at first inferred by analogy from that of the "spheres". Now as to the question of fact, if it were in any doubt, the evidence of Aristotle ought to settle it, confirmed as it is by the explicit testimony of Theophrastus. If Aristotle cannot be trusted to know whether Plato said that the earth moves, there is an end of all reliance on human testimony. But fortunately the point is settled by appeal to the text of the Platonic MSS. themselves. In *Timaeus* 40c there is no manner of doubt that the true text is γῆ . . . ἵλλομένη δὲ τὴν περὶ τὸν δία παντὸς πόλον τεταμένην, and this admits of only one translation. The whole controversy between Boeckh and Grote might have been avoided if the nineteenth century editions of Plato had honestly printed the text as it stands in Paris A instead of concealing it in an appendix. The words mean that the earth revolves round the axis of the universe (literally "oscillates on her path about the axis which passes through the whole"). The "inconsistency" supposed by Grote only exists in his imagination. Not knowing the real text of the *Timaeus* passage, and correctly inferring from Aristotle and Theophrastus that Plato ascribed a motion to the earth, Grote very naturally supposes the words to refer to a rotation. On this theory it would

be true, as Grote thought, that the axial rotations of the "whole" and of the earth might cancel out. But this is not true of the two motions of which Plato is really speaking; they do not cancel out, and they do offer an explanation of the facts they are meant to explain, the irregularities in the apparent paths of the planets as seen from the earth. Grote's mistake is, in fact, a complicated one. Apart from his ignorance of the genuine words of Plato, he further assumed that, since the earth is spoken of, immediately after the words just quoted as "devised for a guardian of night and day," the motion ascribed to the earth must be intended to account for the alternation of day and night. But all that is really meant by these words is that night is the shadow of the earth, as Timaeus's contemporary Empedocles had said, so that this particular phrase would decide nothing either as to the general question of the earth's movement or as to the special character of the movement. It is a further error to suppose that the earth's movement was inferred "by analogy" from that of the "spheres," for the simple reason that, as the ancient commentators knew very well, the whole doctrine of the "crystal spheres" was, most unhappily, invented by Aristotle. There is not a word about these "spheres" in any pre-Aristotelian cosmologist, and least of all in the *Timaeus*, which speaks only of circular "orbits," a conception which goes right back to Anaximander. I dwell on the point at some length, because the habit of crediting Greek science in general with the retrograde astronomy of Aristotle makes it simply impossible to give any correct account at all of the real historical development of the sciences.

And now to come to the *intellectus agens*. I must confess that I have never myself been able to extract any very definite light from the few and broken phrases which are all we have of Aristotle's own account of this mystery, and cannot feel at all sure that he really had any very clear perception of his own meaning. All that I feel sure of is that there is no warrant at all in Aristotle's text for the identification of this *intellectus agens* with God, and that so far the Thomist interpretation of the doctrine is nearer the truth than that of Alexander or of Avicenna or of Averroes. Dr. Benn apparently would agree with me on this point since his own explanation (p. 307) is that what Aristotle means is "personal self-consciousness". This would, of course, bring his doctrine very close to the teaching of T. H. Green about the "spiritual principle in man," which, by the way, I have always supposed to have been derived from this very Aristotelian theory rather than from any of Green's German masters. I should therefore not like to deny that Dr. Benn may be right in his interpretation. But I should like to urge that, whether right or wrong, the theory, like every other attempt to solve the riddle, has grave difficulties to face, and that it is at least possible that the problem admits of no determinate solution for the simple reason that Aristotle's ideas were themselves

hopelessly confused. Dr. Benn is himself, I think, quite alive to some of the difficulties, but I am not sure that he faces them all. Aristotle, as he understands him, means that "the exercise of a self-distinguishing consciousness is a necessary condition of all other ideation" (so far, then, agreeing exactly with Green), and that this is "an aptitude not present in the individual human being from the first beginning of conscious life but acquired by intercourse with" adult companions. The second part of the statement Dr. Benn regards as true, but he thinks Aristotle mistaken in holding that "the presence of a self-distinguishing consciousness is necessary for the formation . . . of general ideas," on the ground that "children are entitled to be called rational beings before they become conscious of their personality as such".

If we take the first of my quotations from Dr. Benn simply as an exegesis of Aristotle's words, apart from the question of its truth to psychological fact, we are, I think, struck at once by a difficulty which Dr. Benn does not discuss. Aristotle, we are to understand, held that the "active intellect" is the "exercise of a self-distinguishing consciousness," and apparently it is this "exercise" (though I am not quite clear how far the grammatical structure of the sentence really corresponds to the author's thought), which is an acquired "aptitude". If we press these words, they would mean that Aristotle believed in an *énérgeia* which is also an "acquired" *έξις*. Now there is no possible doubt that Aristotle insists very strongly that the *intellectus agens* is an *énérgeia* (*cf.* *kai* *οὐτος* ὁ *νοῦς χωριστός καὶ ἀπαθής καὶ ἀμηγῆς τῇ οὐσίᾳ ὡν ἐνέργεια,* and *οὐχ ὅτε μὲν νοεῖ ὅτε δ' οὐ νοεῖ*). His language seems to force us to hold, as against Dr. Benn, that the *énérgeia* in question has never developed out of a previous "aptitude" at all. (At least in the words I have quoted he seems to be explicitly denying this as emphatically as he can. And it is hardly likely that a critic who makes so much of the verbal point that the Platonists defined the "best life" as an *έξις*, when they should have called it an *énérgeia*, would confuse the two terms in his own pronouncement on what he clearly felt to be a point of the highest importance.) There is really a grave difficulty about the phrase from which Dr. Benn gets his sentence about the "aptitude," the clause in which Aristotle says that the "active intellect" "makes" its objects *ὡς έξις τις, οἷον τὸ φῶς*. (I take it this is an anything but illuminating allusion to the passage about the sun and the "Form of Good" in the *Republic*.) As will be seen from Dr. Hicks's note on the words, even the text, on which Dr. Benn builds, is far from being above suspicion, and I think it plain that, if the words *ὡς έξις τις* are sound, *έξις* cannot here have the technical sense of "aptitude" "tendency". The "light" which "makes colours" is plainly not a *έξις* in the peculiar Aristotelian sense of the word, for light is according to the *de Anima* itself *ἐνέργεια τοῦ διαφανοῦς ή διαφανές* and it is very much to the point that in the terminology which Plato had made current *έξις* really

means very often what Aristotle calls ἐνέργεια. On the whole then, I cannot believe that Aristotle really meant to describe the "active intellect" as an "aptitude" at all. But even if he did, I should feel more than a doubt about the further exegesis according to which this "aptitude" is acquired by *intercourse with others*. I cannot conceive that Dr. Benn holds this interpretation to have a foundation in any actual utterance of Aristotle; indeed, if I understand the drift of his remarks on page 306 about the passage in the *De Generatione Animalium* where it is said that *νοῦς* is the only constituent of man which is not derived by generation from his parents, he admit himself that there is no such utterance. The interpretation must thus be taken on its own merits and simply as a conjecture. Regarding it in this light, there still remains the serious difficulty that Aristotle clearly means to say that the "active intellect" is everlasting as much *a parte ante* as *a parte post*. (This is why he adds to his assertion of its eternity, *οὐ μνημονεύουμεν δέ*, i.e. we cannot remember, was it as held by the believers in transmigration that we can, experiences from our ante-natal life). But an "intellect" which is thus everlasting clearly cannot at the same time be an aptitude "acquired," through social intercourse. And again, it seems quite clear that the "active intellect" is thought of as an imperishable constituent of the *individual* person, though, to be sure, it is not easy to see *what* individuality is left to it when we have excluded all the functions which Aristotle specifies as "perishable". Yet I find it incredible that he should have meant by the everlastingness of the "active intellect" no more than Dr. Benn makes him mean, that there always have been and always will be *some* self-conscious beings or others.¹ In a word, while I think Dr. Benn's interpretation does justice to some of Aristotle's deliverances, there are others which are quite incompatible with it, and I strongly suspect that no interpretation whatever can be found which would be compatible with all of them. I cannot but think that Dr. Benn's comparison of the doctrine with Spinoza's equally confused doctrine of the eternity of the mind goes more to the root of the matter. In both Aristotle and Spinoza I believe we have an attempt to graft conceptions, which are only intelligible on the theory of personal immortality upon a naturalistic doctrine with which they do not harmonise, and the natural result is that no interpretation of either can explain away the inevitable contradictions. This ultimate incoherence is not peculiar to Aristotle's psychology; it reappears in his logic and theology. Everywhere we find him trying to fuse naturalism and Plato, with the

¹ The meaning cannot be that, though human personality is wholly destroyed at death, there are some intellects, "the star-spirits," Dr. Benn says, whose reason never ceases to energise. For it is plain that whatever Aristotle is trying to say, he is at any rate talking about a certain constituent of my mind or your mind. The identification of this constituent either with God or with a "star-spirit" is really grotesque.

result that there is a rift running right through his whole philosophy and ruining its coherence.

ὅτος τ' ἀλειφά τ' ἐκύέας ταῦτα κίτει
διχοστατοῦντ' ἀν σὺ φίλως προσεννέποις.

I have allowed this notice to run to far greater length than I had originally intended or than is perhaps proper in the case of a second edition of a familiar book. I can only plead in defence that, as Phaedo said to the Pythagoreans of Phlius, "it is always most delightful to me to recall" Socrates and his great successors "whether I am myself the speaker or listen to the discourse of another".

A. E. TAYLOR.

Theism and Humanism: being the Gifford Lectures delivered in the University of Glasgow, 1914. By the RIGHT HON. ARTHUR JAMES BALFOUR, F.R.S., LL.D., etc. London: Hodder & Stoughton, 1915. Pp. xv, 274.

Most of the readers of MIND are probably already familiar with the general contents of this book, so that it is hardly necessary to give a detailed summary of it. Mr. Balfour's point of view is also well known from his previous writings and is not here substantially altered—though it is certainly, in some respects, more carefully explained. Some further light is, however, thrown upon it by the very interesting autobiographical sketch that is given in Lecture V. It appears from this that the position which he adopts was arrived at, at an early stage of his career, from reflection on the work of the natural sciences, and dissatisfaction with the empirical philosophy of J. S. Mill as an interpretation and justification of scientific method. In this of course he is not peculiar. Most of our British philosophy in the last generation can be traced to a similar source. In particular, the philosophy of T. H. Green and those who are associated with him grew out of reflections of the same general kind. The subsequent procedure of Mr. Balfour has, however, been very different from that of Green and others. Green sought to meet the inadequacy of the empirical school mainly by the help of Kant, and to a less extent by that of Hegel. Others have used the work of Hegel to a greater extent; some have been largely influenced by Lotze; some have tended to go back to Plato or Aristotle; some even to Berkeley or Protagoras; and some—of whom Mr. Bradley is the most conspicuous—have attempted fresh metaphysical constructions. Mr. Balfour has not adopted any of these methods; nor, it would seem, has he been much influenced by those who have. So far as he is connected with any previous school of thought, his affinity would appear to be with Reid, rather than with the philosophers either of Greece or of Germany. He appeals to Common Sense, i.e. to the inevitable

beliefs of the 'plain man'. He has a profound distrust of metaphysical constructions, though his scorn of them is a good deal more gentle and sympathetic than that of the plain man—especially the plain English man—commonly is; and his interpretation of the beliefs of Common Sense is certainly more subtle than that of Reid. Now, it is not possible here to discuss the general basis of this philosophical position, which has already been before the public for a considerable time. I must content myself with the remark that, if Mr. Balfour would inquire more fully into what are described as inevitable beliefs, he would probably find that what is inevitable is certain tendencies to feel and act, and that the beliefs by which we seek to interpret these tendencies are not inevitable, but are subject to indefinite modification. If we mean by a belief the acceptance of some definite proposition as true,¹ I should doubt whether any belief is inevitable. Even such a simple statement as 'I feel pain' becomes doubtful as soon as I ask what exactly is meant by 'I,' by 'feeling,' and by 'pain'. The experience on which the statement is based, is inevitable; but the belief is an attempt to interpret the experience, and it may be, in some degree, erroneous.² And I think this is true of all beliefs. But it is hardly necessary to press this point, since Mr. Balfour fully admits it with regard to the particular belief with which he is here concerned. He does not maintain that the belief in the existence of God is inevitable, but only that it is more or less definitely implied in some other beliefs or experiences.

The title of this series of Lecture is *Theism and Humanism*; but neither of these terms is very precisely defined. Humanism, indeed, is hardly referred to at all. I understand Mr. Balfour to mean by it, not a special theory, but rather all those things that are specially characteristic of man—such as the pursuit of truth, the appreciation of beauty, the effort after goodness. Theism seems to be interpreted in the sense of Monotheism—*i.e.* the conception of a single personal Being, distinct from the Cosmos, but to be regarded as its Creator. It hardly appears, however, that this conception is definitely brought out in the course of the argument. In general, Mr. Balfour seems to be mainly concerned to urge that certain beliefs to which we are inevitably led cannot be satisfactorily interpreted by any materialistic theory, and especially not by the Darwinian theory of evolution, and that hence we are led to look for some spiritual interpretation of them. Why that interpretation should be monotheistic is, so far as I can see, no-

¹ It is sometimes held that belief is essentially a tendency to act; but this is one of the doctrines of that Empiricism against which Mr. Balfour contends.

² From failure to observe this distinction, I think Mr. Balfour tends to misrepresent the attitude of Hume (as Reid also did). Hume accepted customary modes of behaviour, like most other men. It was only the theoretical implications, supposed to be involved in such behaviour, for which he could find no satisfactory basis.

where made apparent. Mr. Balfour, indeed, explicitly recognises that there are two divergent views with regard to the spiritual interpretation of the Universe—views that may be roughly characterised as Pantheistic and Monotheistic respectively. The former commends itself more particularly (again speaking somewhat roughly) to the metaphysician, the latter to the moralist. Both commend themselves to certain types of religious feeling. I think Mr. Balfour might have added that a Polytheistic interpretation commends itself, in general, to the artist. Goethe, who had a strong interest in all these points of view, definitely adopted all the three methods of interpreting the Universe, using each of them when it happened to suit his special purpose. Not being a constructive philosopher, he did not conceive it to be his business to attempt to reconcile them. Mr. Balfour's attitude appears to be similar, except that he recognises only two methods of spiritual interpretation, and that he definitely confines his attention to one of them. I believe that, by so doing, he seriously weakens his case. It is easier to maintain that some spiritual interpretation of the Universe is necessary for certain purposes, than to maintain that it must be a monotheistic interpretation. Some of Mr. Balfour's arguments seem to me to have considerable force with reference to the more general contention; but I cannot find that they have any force at all with reference to the more specific one; and, even with regard to the more general contention, they do not seem to be quite convincing. Indeed, it would appear that Mr. Balfour himself does not regard them as quite convincing, but only as furnishing us with beliefs that have a certain degree of probability. It would probably be an unfair summing up of his position to say that his contention is that, if we believe certain things with sufficient vagueness, we shall probably not be far wrong; yet this is on the whole the impression that he often appears to convey.

He begins by explaining that the argument from design, in its old form, in which it had been already refuted by Kant and others, has been finally overthrown by the Darwinian doctrine of evolution. He urges, however, that, in a certain sense, it still has value. Darwin's theory only accounts for the selection of certain types: it does not explain their production. This, I suppose, would be generally admitted; and, though Mendelism has probably thrown some further light on the production of types, and there may be other discoveries still in store for us, it seems to be still true, as Mr. Balfour urges, that we have at least to recognise that the Universe is of such a kind as to permit of the production of spiritual beings; and that this is fatal to pure materialism. This line of argument appears to me to be valid. If it were further developed (as it is, for instance, by Prof. Bergson) it might lead to a re-modelling of our view of what is implied in evolution, and prepare the way for a more spiritual conception of the Universe. But it does not appear to carry us very far in the direction of Theism, in

the sense in which Mr. Balfour appears to understand it. M. Bergson's philosophy is pretty obviously akin to that of Plotinus, and perhaps to that of Schopenhauer; and, I suppose, neither of these would be regarded as theistic. The mere refutation of materialism does not help us much. There are very few pure materialists at the present time. As Mr. Balfour well says, 'we now know too much about matter to be materialists'. Even Agnostics, such as Huxley or Herbert Spencer, or Monists, such as Haeckel, cannot be regarded as pure materialists. Spencer, for instance, conceived that the Absolute has to be regarded as super-personal; and surely what is super-personal is spiritual.¹ What he desired was that the nature of the Absolute could be further determined. In this sense Mr. Balfour himself appears to be an Agnostic.² He differs from Spencer, however, in carrying his doubt farther. If he is akin to any of the Greeks, it is to Gorgias. He considers that other things, as well as the Absolute, are unknowable; and that all the deeper truths can only be grasped by faith, or by means of what he calls 'intuitive probability'.

His doctrine of intuitive probability, though it is only introduced near the end of the present series of Lectures, appears to be so important and interesting a part of his philosophy, that it may be well to notice it at this point. He urges that we commonly, and legitimately, speak of probability in a sense that is quite different from that in which probabilities are calculated by mathematicians; and this appears to me to be true. When we say that some scientific theory (such as some form of the atomic theory or of the theory of evolution) is probably true, or that it is probable that the sun will rise to-morrow, we are not using the term in quite the same sense in which it is used when we say that there is a certain probability that a coin that is tossed will fall on one side rather than on another. I am not sure, however, that Mr. Balfour quite succeeds in bringing out the essential difference. The tossing of the coin seems to illustrate both senses. It is probable, in one of the senses, that it will fall on one side; and, in the same sense, it is equally probable that it will fall on the other. It is probable, in the other sense, that it will fall either on the one side or on the other, and not on both at once. It is just conceivable, however, that it might fall on its edge, or that it might split in two and come down on both sides or on neither; but these possibilities are so improbable as to be negligible. In the one case, there are two or more things that may happen, and we can calculate the probability

¹ Mr. Balfour himself seems to suggest (pp. 20-21) that God ought to be thought of as super-personal. But this depends partly on what is properly to be understood by personality—how far, in particular, it implies any necessary limitation.

² No doubt the term is generally interpreted in a more negative sense than this; but I do not understand that it was so intended by its best exponents.

of each. In the other case, there is only one thing that is probable ; but it is not absolutely certain. In the one case, we are not entitled to believe that any one of the events will take place.¹ In the other case, we are entitled to believe some more or less definite statement, though not with complete assurance. Now, Mr. Balfour's contention is that all that we call knowledge, whether about the Absolute, or about the processes of the physical world, has only a certain degree of probability in the second of these two senses. And, so far, he seems to me to be right. But when he calls this kind of probability 'intuitive probability,' he appears to be on more treacherous ground. Our belief that a coin will fall either on the one side or on the other and not on both, or that some form of the atomic theory or of the theory of evolution is true, appears to rest on definite grounds, though the grounds may not be such as to carry complete conviction. But Mr. Balfour urges that, in some cases, there is no definite ground except an intuition. This calls for consideration.

He takes as instances of this the anticipation of scientific theories before they have been definitely tested—such as the anticipation of the atomic theory by Democritus or that of the conservation of energy by Descartes and Leibniz. Now, it is probably true that almost every important scientific theory has been guessed before it was established. In the work of the early Greek philosophers there are anticipations of almost all our modern science and philosophy. In a sense, this may be said to imply a kind of intuitive insight ; but hardly, I think, in any sense in which intuition is contrasted with intellectual construction. Mr. Balfour seems to indicate the true explanation when he lays emphasis on the aspect of orderliness in the world. Scientific and philosophical thinkers—and indeed even 'plain men' to some extent—are constantly looking out for what is orderly and intelligible. This is the presupposition of the work on which they are engaged. If we are to speak of Laws of Thought at all (perhaps it would be better to call them Implications of Thought), the principle of objective order may surely be regarded as one of the most fundamental of them. The world that we apprehend lends itself, in some degree, to interpretation by means of this principle. If it did not, it seems clear that there would be no such thing as science, or even of thought at all. We should be involved in a chaos much more complete than the Heraclitean flux or the Disorder of Anaxagoras. But do

¹ It may be noted here that Mr. Balfour appears to think that it is involved in the doctrine of chances that, if we went on tossing a coin long enough, it would fall an equal number of times on each side. I think this is erroneous. So far as the doctrine of chances is concerned, there might be an indefinite run of luck in favour of one side. This is improbable, and we should at once suspect some cause of the uniformity. But the probability of such a cause is probability *in the other sense*. Of course, the two senses are not wholly distinct : they relate to different types of uncertainty.

we need to postulate an external God to account for the order that we discover? It does not appear that we should have any right to make such a postulate. On the doctrine of chances, a world that is partially ordered would seem as likely as one that is a perfect Cosmos or a perfect Chaos. Nor does it seem very difficult to understand how it is that even the plain man is led to anticipate order. Even the lower animals appear to be able, in some degree, to apprehend the orderly sequence of day and night, some causal relations, and other modes of order, and to be in some degree surprised when the customary order is broken. Human beings expect order in a more conscious way, and are constantly seeking either to find it or to make it. This is a guiding principle in all thought and action. It is one that sometimes misleads us to too hasty applications, and so becomes, as Bacon noted, one of the *Idola* against which we have to guard. But it is also the source of some of our happiest inspirations. Both its value and its dangers are well brought out by Mr. Balfour in his illustrations from the atomic theory and the principle of conservation. But I think he makes of it too much of a mystery. It does not seem, by itself, to lead us to any form of Theism, though it may suggest the view that the world is an organic unity, or even that it is in its essence spiritual. If it is in its essence spiritual, the question as to its origin would seem to be irrelevant—perhaps even meaningless. But to show this would call for a philosophy of a more systematic type than any that Mr. Balfour supplies. Unless the Universe that we apprehend can be shown to be essentially spiritual, it does not seem possible to infer any spiritual principle outside of it. On the other hand, if it can be shown to be self-explanatory, as Hegel thought, there would be no point in inquiring into its origin.

He lays much stress also on some æsthetical and ethical considerations. The most important point seems to be that we recognise certain forms of beauty and goodness as having intrinsic worth, and not merely the survival value, which is all that we should expect in accordance with the doctrine of evolution. This is probably valid as bringing out the inadequacy of the Darwinian theory; but it has been forcibly urged—notably by Dr. G. E. Moore—that intrinsic value may be recognised without any doctrine of Theism, and even without any theory of the spirituality of the Universe. Mr. Balfour may disagree with Dr. Moore (as, in some respects, I also do), but at least his contention seems to deserve consideration. Apart from this, Mr. Balfour's argument seems to me to carry conviction.

He is, I think, less convincing when he urges that the higher forms of beauty and goodness have no survival value. He states his case here with great caution. He is inclined, in particular, to question some of the extreme statements of Huxley with regard to the opposition between the moral life of man and the cosmic pro-

cess. I think he might have gone a little further. When it is seen, as some recent evolutionists have urged, that mutual aid is as important for the survival of animal species as anything that can properly be described as struggle, the difference in this respect between human and animal life has to be regarded as only one of degree. It may be doubted whether it could be shown that anything that cultivated people admire, either aesthetically or ethically, is wholly destitute of value for the preservation of the lives of individuals or societies or of the race in general. Certainly it seems to me that what has intrinsic value in living beings has nearly always some survival value as well. But this is a pretty big subject, and must on the whole be left to biologists and sociologists.

I must confess that one of the other arguments that Mr. Balfour uses with regard to aesthetics, and to which he seems to attach considerable weight, does not carry any conviction to my mind at all. He urges that beauty in art is essentially expressive, and implies an artist; and hence he argues that beauty in nature must carry a similar implication. No doubt, when we are interested in any work of art, we tend to take an interest in the artist, and sometimes—in lyrical poetry, for instance—the two things are almost inseparable. But, in general, it seems to me that the interest in the artist is biographical or historical, rather than æsthetical. The æsthetical value of the '*Iliad*' appears to be independent of the question—however interesting it may be in itself—whether it had one author or many; and, if it could be supposed to have come into being without any author at all, its purely æsthetical value would appear to be unaffected. Mr. Bernard Shaw, in one of his amusing plays, represents Shakespeare as picking up choice phrases for his poems from current discourse, and jotting them down in a note-book. If we could suppose his poetry to have been constructed in this way, it might seriously affect our view of his genius, but surely it would not affect the message that his works convey. We know very little of the makers of the old Cathedrals. Perhaps, as Emerson said, 'they builded better than they knew'; but if the stones grew unconsciously to beauty, at least they may take their place 'with Andes or with Ararat'. Their expression is what they mean for us, not necessarily what they meant to any one before us; though, of course, in the case of works of art—especially poetry—we like to think of the fine qualities of mind and heart that must have been present in their creators.

Mr. Balfour urges, further, that the highest forms of art imply some belief in spiritual reality. This is apparently an argument in support of the value of the belief, rather than of its truth; and it is not obvious that the one implies the other. Some illusions may have intrinsic value. In any case, it is doubtful whether it is a good argument in support of Theism. Mr. Balfour seems to hint that Lucretius and Shelley would probably have been better poets if they had been Theists. History hardly appears to support

such a view. Of all peoples, I suppose the Jews and the Mohammedans have been the most ardent Theists; but it is certainly not self-evident that they have been the finest artists. Puritanism, which was pretty strong on the side of Theism, was not so strong on the side of art. Its greatest poet—who learned his art in a different school—failed, rather conspicuously, to make God the Father a poetic figure. Even to Death and Sin he gave more vitality, not to speak of Satan, who is often regarded as the hero of the poem, and with whom many are almost ‘inevitably’ led to sympathise in his revolt against the somewhat too Prussian ‘tyranny of Heaven’. Greek art, when not purely human, was frankly polytheistic. For the mediæval artists there were at least three divine Persons (though it was chiefly one of them that they used, and that one the most human and the most tragic)—besides the Virgin Mother and legions of angels, saints and devils. Even more modern poets, of a not very heterodox type, have been known to wish that they might—

Have sight of Proteus rising from the sea,
Or hear old Triton blow his wreathèd horn.

There appears to be no real reason against the supposition of an indefinite number of spiritual beings (there are a considerable number of them on our own little planet); and it seems clearly to be the best supposition for the purposes of art. That pure materialism would be fatal to the highest forms of art, is probably true; but pure materialism hardly seems to be a theory that is worth considering. The belief that the Universe is essentially spiritual (if that could be established) would enable us to regard everything as either spirit or some manifestation of spirit.

Mr. Balfour has some interesting remarks on the study of history, regarded from the point of view of æsthetics. He urges that we have an æsthetic satisfaction in regarding it as the working out of a great purpose; and this, he thinks, implies that we look at it from a more or less definitely theistic point of view. I suppose the work of Carlyle would be a good illustration of the method of treatment to which he refers; but it is doubtful whether Carlyle’s somewhat vague mysticism can be properly called theistic. Indeed, it may be questioned whether any theistic writer has ever set the drama of history before us in a more impressive way than that of Thucydides or Gibbon. The mention of Thucydides naturally suggests that the interest of history might very well be that of a poignant tragedy, like that involved in the crumbling of the Athenian state. It is of a similar fall that Gibbon treats. Mr. Balfour is probably acquainted with the striking Essay by Mr. Russell on ‘The Free Man’s Worship,’ in which it is shown how the whole history of human life might be viewed as an appalling tragedy, lit up by the recognition of the objective reality of the Good. I suppose the religion of Buddhism would fit in rather well

with such a conception. Such a view is certainly sad; but some of our sweetest songs have told of saddest thought. Tragedy is not one of the lowest forms of art.¹ Even the 'Divine Comedy' of Dante has much in it that is in the highest degree melancholy; and, though it concludes with a sublime joy, it may be doubted whether it is a finer work of art than 'Hamlet' or 'King Lear'. The frustration of human effort may have as deep an aesthetic significance as its success. 'Faust' might, no doubt, be referred to as supplying, for the modern mind, a more satisfactory Theodicy than any of those that have been mentioned; but Goethe's treatment of human life and history is largely symbolic ('Alles Vergängliche ist nur ein Gleicheniss'); and, as already noted, Goethe can hardly be claimed as being, in any very definite sense, a Theist. The work of Browning might perhaps approximate more nearly to the kind of interpretation of human life and destiny that Mr. Balfour would approve; but, inspiring as it is, it can hardly be contended that his attempts to give artistic form to theological doctrine are (with a few exceptions) the most successful part of his work. In general, it would not be easy to show that the artistic interpretation of life has been helped by Theism.

In dealing with the problem of Ethics, Mr. Balfour expresses incidentally his agreement with Nietzsche, in thinking that Christian morality cannot really be retained in separation from Christian doctrine. This depends a good deal, I should suppose, on what is regarded as being included in Christian morality and in Christian doctrine. The parable of the Good Samaritan needs no dogma to enforce its lesson. Surely most of the Christian virtues commend themselves to us both by their social utility and by their intrinsic beauty. There have been few more enthusiastic prophets of Christian morality than Tolstoy, who did not believe either in the special divinity of Christ or in the personality of God. With some qualification, a similar remark might be made about Ruskin. Of course, those who have learned to doubt one kind of traditional belief may very easily go on to question another. A critical intelligence is not likely to accept any traditional view quite in the form in which it has been handed down. I should be surprised to learn, for example, that Mr. Balfour himself accepts the principle of non-resistance to evil (or the injunction to 'take no thought for the morrow'), without considerable qualification. On the other hand, many moderate pacifists—and even some rather extreme ones—would not describe themselves as Christians (even in the sense in which Tolstoy might be said to have been one). Indeed, I suppose there are more non-resisters in China than in Christendom. Any one in Christendom who should try to practise the whole of Christian

¹ It is perhaps true that a tragedy, to be artistically satisfactory, must be relieved by something that is not wholly sad; but it is certainly not clear that the relief need be anything so palpable as Theism, or even as a spiritual conception of the Universe.

morality literally, would certainly be regarded as somewhat eccentric. On the other hand, the virtues that are actually cultivated and admired in Christendom are surely not very widely different from those that were cultivated and admired in ancient Greece (though no doubt there has been some change of emphasis). On the whole, there does not appear to be any logical, though there may often be a very strong psychological, connexion between the main principles of Christian morality and its more speculative dogmas. Certainly Nietzsche, though in some other ways instructive (especially on the transvaluation of values), can hardly be accepted as a good authority on logical connexions.

Another interesting problem that is incidentally raised by Mr. Balfour, has reference to the predictability of human action. His contention is that the prediction of results, even of a purely physical kind, is dependent on the negligibility of minute differences. In the case of living beings, the differences are not negligible; and hence, even if we grant the doctrine of pure determinism, the actions of living beings, and especially of human beings, could not be predicted. This point does not appear to have any direct bearing on the main argument of the book; and we need not, therefore, dwell upon it at much length. It may be noted, however, that it seems to relate only to prediction of a purely mathematical type, such as that suggested by Laplace. If there are definite laws of the variations of living beings—such as those that appear to have been discovered by Mendel—it would seem to be theoretically possible to forecast their development. Similarly, if there are definite psychological laws affecting mental growth, the prediction of human action would seem to be theoretically possible—unless there is some real contingency, as Dr. Ward and others contend. But of course it would be too complicated to yield any practical certainty.

I trust the criticisms that I have ventured to make will not be taken to imply any lack of appreciation of Mr. Balfour's work. Probably I have in some cases failed to grasp his exact meaning; and almost certainly I have done him some injustice through not sufficiently taking account of the class of readers for whom his book is chiefly intended. I think it ought to be very good for any materialists or materialistic agnostics who may still be left. It is a pity that Leslie Stephen is not alive to read it—though I fancy he might have had something to say in reply. But many will feel, I believe, that some of its arguments are sophistical, and that it raises more doubts than it removes. It would be an impertinence to praise the lucidity and brilliance of its style, the ingenuity of its reasoning, or the wide range of the knowledge that it displays. I hope it may not be counted an impertinence to suggest that its main value is not intrinsic, but lies rather in the stimulus that it may give to a large number of readers to seek for a more systematic treatment of the great problems on which Mr. Balfour has so skilfully, and yet so lightly, touched. It would hardly be possible to

read his book intelligently without receiving such a stimulus. Happily some of the other Gifford Lectures provide, to a certain extent, the necessary sequel. It is to be hoped that Mr. Balfour himself will do something further in this direction.

J. S. MACKENZIE.

German Philosophy and Politics. By JOHN DEWEY. New York: Henry Holt & Co. Pp. 134.

THE War came as a terrible shock to the intellectuals everywhere. It revealed that the actual world was a very different thing from the cosmic order they had constructed in their minds, and threw them into disorder. They reacted upon the intrusion of unwelcome fact by a multitude of affirmations, manifestoes and pamphlets which in general will be neglected by the historian as the pathetic outcries of anger and anguish, attesting how very human professors also may be in a crisis. Yet even in their distress they clung instinctively to their professorial ideal. Even though the rational order of human affairs was shattered before their eyes and the belief that thought controls man's feelings and determines his acts should have been among the first of the illusions swept away in the wreckage of the war, they insisted on finding ideal reasons to which to attribute the catastrophe. The intellectuals on each side paid those of the other the compliment of accusing their teaching of bearing the moral responsibility for the war, and even if they did not diffuse much light nor exactly prove their case, they managed at any rate to prevent the public from becoming totally oblivious of the existence of professors.

But what, if anything, had Darwin to do with the most ferocious struggle for existence ever seen among tribes of men, or Nietzsche and Treitschke with the running *amok* of Germany? It could not perhaps be expected that any of the belligerents would discuss these questions calmly and connectedly, and even among the neutrals there were not many qualified by their knowledge, temper and philosophy to treat them judicially. It must therefore be accounted a singular piece of good fortune that Prof. Dewey was given the opportunity of delivering these three lectures on the Two Worlds of German Philosophy, German Moral and Political Philosophy, and the Germanic Philosophy of History, in the University of North Carolina. The result is an entirely admirable book, clear, calm, cogent, and popular without being shallow. Prof. Dewey was assuredly the ideal person to handle the subject. For though he had made a deep and sympathetic study of German philosophy, he had in the end turned away from it to become a leader in the movement which is most highly antithetical to the traditionally German type of philosophising. It must not indeed be alleged

that the Anglo-Saxon world has a monopoly of the pragmatic habit of mind; for all men have to act and pragmatism is only the theoretic apprehension of the attitude which imposes itself on every agent everywhere. But it is probably right to regard this habit of mind as characteristically congenial to Anglo-Saxon life, and it was a perception of this that so infuriated our germanised professors, who prided themselves on their superiority to the vulgar practicality of the national bent. But all this only lends piquancy to Prof. Dewey's criticism of German ideas: he can not merely point out where they go wrong, but can at the same time point to a better way.

The whole argument is closely knit and highly instructive. Prof. Dewey begins with an emphatic challenge to the reputed influence of *pure* thought on human action. "There are no such things as *pure* ideas or *pure* reason"; most of what is ascribed to philosophic reflection "is in effect simply an idealisation, for the sake of emotional satisfaction, of the brutally given state of affairs, and is not a genuine discovery of the practical influence of ideas. In other words, I believe it to be aesthetic in type even when sadly lacking in aesthetic form" (p. 7). But, just because "genuine and vital ideas" are practical responses to the pressure of the environment, it is a mistake to "regard philosophic theories as practically innocuous as more or less amiable speculations" (p. 9), and to disregard the influence of philosophers. The philosophers themselves are to blame for this. "They have been taken mostly at their own word as to what they were doing, and what for the most part they have pretended to do is radically different from what they have actually done. They are quite negligible as seers and reporters of ultimate reality, or the essential nature of things. And it is in this aspect that they have mostly fancied seeing themselves. Their actual office has been quite other. They have told about nature and life and society in terms of collective human desire and aspiration as these were determined by contemporary difficulties and struggles" (pp. 9-10). But just because their thinking was not 'pure,' it was not irrelevant to the guidance of life; it had influence, for good or ill.

The "highly technical, professorial and predominantly *a priori* character" of classic German thought seems a piquant challenge to this interpretation of the social function of philosophy. Yet it really affords it confirmation. For the Germans appear to "have philosophy in their blood". This really means that "Germany is the modern state which has provided the greatest facilities for general ideas to take effect through social inculcation" (p. 14). Hence the ideas of her academically influential philosophers pervade the minds of her rulers.

Prof. Dewey proceeds to exemplify. The contemporary attitude of intellectual Germany is not due to Nietzsche, but is rooted in the old classic 'idealism'. To the Kantian dualism between the

outer and the inner realm is traced the "combination of self-conscious idealism with unsurpassed technical efficiency and organisation" (p. 28). Thus it is that "while the Germans have been the most technically pragmatic of all peoples in their actual conduct of affairs, there is no people so hostile to the spirit of a pragmatic philosophy" (p. 30). Yet the Kantian way of reconciling indulgence in ideals with practical efficiency has its dangers. There is no give and take about *a priori* truths, and they do not yield to experience, especially when we take our prejudices and predilections to have this transcendental sanction. Hence "weapons forged in the smithy of the Absolute become brutal and cruel when confronted by merely human resistance" (p. 43).

Moreover Kant's ethics, being "the gospel of a Duty devoid of content, naturally lent itself to the consecration and idealisation of such specific duties as the existing national order might prescribe. The sense of duty must get its subject matter somewhere, . . . and concretely what the State commands is the congenial outer filling of a purely inner sense of duty" (p. 53). Moreover "persons who profess no regard for happiness as a test of action have an unfortunate way of living up to their principle by making others unhappy" (p. 58).

Finally, it is only necessary to conceive the State as a sort of sacred force "consecrated to the assertion and expansion of final goods which are spiritual, moral, rational" (p. 58), to start the post-Kantian glorification and deification of this nationalist all-absorbing organisation. Kant himself remained a cosmopolitan individualist who aspired to an international federation of mankind that would enjoy perpetual peace; but Fichte effected an alliance between German idealism and Prussian realism. The divine right of the national State was excoitated by him, after Jena. Yet "in the grosser sense of the words Germany has not held that might makes right" (p. 88). It has only "been instructed by a long line of philosophers that it is the business of ideal right to gather might to itself in order that it may cease to be merely ideal. The State represents exactly this incarnation of ideal law and right in effective might. The military arm is part of this moral embodiment. That war demands self-sacrifice is but the more convincing proof of its profound morality. It is the final seal of devotion to the extension of the kingdom of the Absolute on earth" (pp. 88-89).

This philosophy "stands and falls with the conception of an Absolute" and "philosophical absolutism may be practically as dangerous as political absolutism. . . . Any philosophy which is not consistently experimental will always traffic in absolutes no matter in how disguised a form. In German political philosophy, the traffic is without mask" (p. 89).

In Hegel, in spite of his idealism "the greatest realist known to philosophy—he might be called a Brutalist" (p. 107), the ex-

alation of the State is completed. He regarded the State as the individual of history, and history as "the evolution of the Absolute, moving from one National Individual to another" (p. 115). War moreover was implicit in his 'dialectic,' as the 'negation' assuring a higher synthesis of 'Reason'. It is also "the most effective preacher of the vanity of all merely finite interests; it puts an end to that selfish egoism of the individual by which he would claim his life and his property as his own" (p. 119).

Prof. Dewey infers from this whole development that in it too the formation and vogue of philosophic ideas have been controlled by politics. Yet "even if we went so far as to say that reigning philosophers simply reflect as in a mirror contemporary social struggles . . . when what a people sees in its intellectual looking-glass is its own organisation and its own historic evolution as an organic instrument of the accomplishment of an Absolute Will and Law, the articulating and consolidating efficacy of the reflection is immensely intensified" (p. 123). Outside Germany, German idealism has had a certain professional and literary influence, mainly on the teaching of philosophy, but in Germany it has been "both indigenous and widely applied" (p. 124).

The question which, according to Prof. Dewey, the present crisis should force upon thoughtful persons is that of "the value for the general aims of civilisation of a philosophy of the *a priori*". Seeing that the world scene presents "*a priori* and absolutistic philosophy gone into bankruptcy, what type of general ideas is available for the articulation and guidance of our own life?" (p. 124). Philosophy in America must meet the conditions of American life. Now these are pragmatic. "Outside narrow and professorial circles," "our working principle is to try to find out by trying and to measure the worth of the ideas and theories tried by the success with which they meet the test of application in practice. Concrete consequences rather than *a priori* rules supply our guiding principles. . . . That such an experimental philosophy of life means a dangerous experiment goes without saying. It permits, sooner or later it may require, every alleged sacrosanct principle to submit to ordeal by fire—to trial by service rendered" (pp. 125-126). It differs from the older empiricisms in not being restricted to precedents; "consequences rather than antecedents measure the worth of theories". But it must not "set less store upon methodic and organised intelligence, but more". It is unwise "to trust to an empirical philosophy of muddling along". "We must learn from Germany what methodic and organised work means" (p. 128). But there must be free choice of ends as well as of means, and Prof. Dewey worthily concludes his eminently sane and stimulating lectures with a suggestion that in face of the present "breakdown of the whole philosophy of Nationalism" the mission of America, inter-racial and international as she is, is not merely to keep the peace but to intervene actively to promote human inter-

course irrespective of class, racial, geographical and national limits.

Alike as a philosopher and as a pragmatist I have every reason for whole-hearted approval of Prof. Dewey's argument. And yet I am at times troubled by a doubt whether he has not himself succumbed a little to the professional temptation he rebukes so well, and gone too far in magnifying the office of philosophy. He is right no doubt in thinking that if the political attitude of Germany has been inspired by any philosopher it is by Hegel rather than by Nietzsche, and also that the Hegelian theory of the State was merely exaggerating in technical and abstract language the actual organisation of Prussia. This at any rate the Prussian State itself supposed; this was why for twenty years it allowed Hegel to nominate the professors of philosophy throughout the Prussian universities. But is it the whole story? The large and influential section of our rulers which was educated at Balliol by T. H. Green and his followers has been for years indoctrinating us with this same theory without any terrible effects. So may not the verdict of history on the great War ultimately be that philosophic ideas had as little to do with it as with other wars? Partly because neither the masses nor their rulers are wont to trouble themselves greatly about ideas anywhere, partly because in times of stress the ideas men tend to are far simpler and more primitive than any philosophy can proffer. The all-but perfect unanimity, for example, which every belligerent people has exhibited cannot surely be attributed to any philosophic agreement. In every country the most divergent beliefs and ideals continue to be held. But these divergences were rendered irrelevant to the situation. The governments everywhere managed to convince their peoples that they were fighting in defence of their life, property and national existence. These are, and always have been, the primary motives that send men to the battlefields, though at various times governments have eked them out by appeals to honour, glory, loyalty, religion, plunder and (now) 'nationality'. All this was as true of the Germans as of the other combatants. The stage-managing of their government was good enough to convince them, apparently to a man, that they were fighting essentially in self-defence. It is hard to see therefore why men who believed this should burden themselves with philosophic justifications of aggressive warfare, though no doubt it was natural enough that their enemies, who believed in the case made out by their own rulers and regarded them as the aggressors, should ransack German literature to find in it corroboration of their suspicions. Of course they found it; for violence and war have their prophets in every country. What is lacking is the proof that these prophets had sufficient honour in their country to occasion the catastrophe. But perhaps it will be contended that the German government at least was the victim of a false philosophy. This too is hard to prove. For though that government no doubt had its

own reasons for making the war, it is very unlikely that it published them, and certain that it did not take Nietzsche and Bernhardi into its counsels. It seems more probable that its motives did not differ essentially from those that have always prompted governments to go to war.

It is however rather an academic question to dispute how great was the influence of their philosophies upon the Germans, and it is more important to take to heart Prof. Dewey's warnings that when it comes to action rationalistic principles have to be set aside and success has to be achieved by pragmatic methods, while nevertheless the mental rigidity fostered by rationalistic beliefs will render action less adaptable, more fanatical and less humane. The former of these considerations renders it impossible for rationalism to achieve the theoretic aim of philosophy, the conceptual unification of life; it cannot rid itself of the dualism of 'theory' and 'practice,' and cannot see that each is and must be relevant to the other. The latter leads to its practical defeat; for, whatever the outcome of the present struggle, it is impossible to believe that in the long run the blind dogmatism and narrow pedantry which rationalism tends to when acted on will prevail over the pragmatist's open-minded willingness to experiment and learn unendingly. For the world we are trying to inhabit and control is too vast, too variable and too subtle to be caught within the bounds of any rigid system, and every step we advanced was to be won only by the unceasing correction of the human fictions that were discarded as 'errors' so soon as a more serviceable substitute for them could be devised. Yet these 'errors' reigned in their day as 'truths,' and our reigning truths are fabricated out of the same stuff by the same hands; is it necessary then, or wise, to delude ourselves by conceding absoluteness to our present dynasties?

F. C. S. SCHILLER.

The Problem of Knowledge. By DOUGLAS CLYDE MACINTOSH, Ph.D.
London : G. Allen & Unwin, Ltd. 1916. Pp. xviii, 503.

THE purpose of this elaborate book is to give a critique of knowledge both mediate and immediate. Accordingly the author deals with the character of the knowledge obtained through perception, the relation of the senses to the intellect, the meaning of truth and of values, and the nature of scientific proof. The first of these problems is discussed at much greater length than the others, but the book attempts to be both systematic and complete. The conclusion is described as that of 'critical monism' in epistemology, and, more specifically, as that of 'critical realistic epistemological monism' with regard to the problems of perception.

Although the standpoint of the book is not Kantian (even if it may be described in some respects as an inverted Kantianism) the

term 'critical' is necessarily reminiscent of Kant, and there is resemblance at least in the absence of dogmatism which is the professed intention of both theories. This book, however, is critical in the usual sense also; for the bulk of it consists of the criticism of opposing theories. Certainly there are manifest advantages in leading up to a constructive statement through the reasoned rejection of other alternatives, and this progressive elimination is implied in the author's mode of exposition. Still, when we find that the execution of this design involves at least three parts of criticism to one of construction, we may reasonably wonder whether so much negative argument is really required in an argument intended to be constructive on the whole. It is plain that any writer who adopts this method sets himself a very difficult task. The species and varieties of theory on this important matter are so numerous that it is impossible to give an exhaustive critique of them all, and although, on a subject of this kind, there is comparatively little danger of diverging from the point in dispute, and so of being lost in *minutiae*, it is scarcely possible at one and the same time to give an accurate exposition of opposing views, to preserve a due sense of proportion in the criticism of them, and to use this criticism as an instrument of further construction. Moreover even the most modest of writers should remember Dr. Johnson's remark concerning the author of *Hudibras* 'that he who merely makes a book out of books may be useful but can scarcely be great'. It would be unfair to suggest that this book often looks like an annotated bibliography, but it is hard to suppose that the criticism it contains should require so much verbal quotation and mere summary, or that there ought to be an average of at least four references per page. And however useful it may be to have a systematic classification of epistemological theories (especially of those of recent and, principally, of American origin) there seems to be some lack of proportion in devoting more space to Prof. Hocking than to Plato and Berkeley together, even if Prof. Hocking's theory cannot be adequately described by a simpler title than that of 'mystical logical psychological idealism'.

After a short introduction the book begins with a critique of dualism in epistemology, and follows the traditional lines in its refutation of the Kantian thing-in-itself and kindred theories. If the interpretation of Kant is correct (and both interpretation and criticism are very summary) the refutation is certainly valid, and the same remark may be made concerning the other authors who are weighed and found wanting. A critique of idealism follows (psychological, logical or mystical), together with a criticism of what are called the disintegrated forms of idealism, a sort of idealism of the left. It would be impossible to attempt an adequate survey of this long, elaborate and carefully sub-divided discussion within the limits of a review, so it must suffice to remark that the author finds the *virus* of psychological (or subjective) idealism in-

fecting any form of idealistic theory. This kind of criticism has been heard before, and idealists have not been slow to accept the challenge; but if the criticism is not new, many philosophers believe it to be true. We should also note that the refutation of logical idealism (in so far as that theory can be cleansed of the taint of subjectivism) depends upon the presupposition that an idea (or predicate) is necessarily both abstract and representative, and that logical idealism is therefore mistaken in attempting to regard the world as constituted of predicates. Ideas on this theory, we are told, are only abstractions of an abstraction, a phrase which seems to mean that the 'logical idealist' ignores the fact that a predicate, considered independently, is an abstraction from a judgment, and cannot, therefore, be itself real.

The next step in the argument consists of a critique of realism old and new. This theory is discussed very fully, especially in the form in which it has recently been defended in America, and in connexion with such developments of it as behaviourism. The new realist is accused of dogmatism, of failure to give a plausible account of the *status* of images and of the objects of erroneous judgments of sense-perception, and of other mistakes and oversights among which the realistic theory that consciousness consists merely of a relation (apparently a relation between a subject, otherwise unspecified, and an object) is the first and chief. This latter interpretation may be justified in the case of some realists but surely most of the new realists maintain that consciousness exists as truly as its objects do, and that it consists of a set of experiences each of which exists (though not in isolation) and is related to its object without itself *being* a relation at all.

A constructive statement follows, setting forth the doctrine of critical realistic epistemological monism concerning the direct objects of sense-perception; and the author proceeds to show that there is nothing casual in such a monism, since there can be no ultimate dualism in the way of knowing, whatever the object may happen to be. With this aim in view he endeavours to establish a critical theory on lines that are not unfamiliar. The senses are nothing without interpretation, and interpretation itself is nothing except the extension and representation of a percept through ideas. Since he presupposes throughout his argument that *existent* reality is the only possible object of true thinking, that universals must be mere abstract representations, and that any theory which even suggests that there may be non-mental objects which are capable of being thought truly yet do not exist is so inherently absurd that the bare mention of it is a sufficient refutation, he has little difficulty in establishing his contention, or in giving an account of the origin of cognition in keeping with the facts of evolution.

These explanations form a connecting link between the first part of the book dealing with immediate perceptual acquaintance, and the second part dealing with mediate knowledge and the nature of

truth and of evidence. The argument in this second part consists principally of a critique of intellectualism on the one hand, and of pragmatism on the other with the inevitable constructive synthesis (or compromise) following. Students of Kant will be surprised to learn that the theory of the *Critique of Practical Reason* is an "absolute dualism of intellectualism and pragmatism," and will ask, not unreasonably, what meaning they can attach in that case to such explicit statements of Kant as that "it is still only one and the same reason which, whether in a theoretical or a practical point of view, judges according to *a priori* principles," or what is the connexion between an anti-intellectualistic pragmatism and the "objective reality of pure practical reason" untrammelled by any empirical limitations or conditions. But this book abounds with disputable statements of that kind, principally because there is no room for detailed scholarship in its five hundred pages. The discussion of pragmatism, however, is full and interesting, and the author's constructive theory of 'critical pragmatic logical monism' is the most ingenious part of his book. In judgment, he says, there is always a subject and a predicate. The subject is a piece of independent reality, part of which is explicitly known. The predicate is a representation which amplifies the explicit subject and, for practical purposes, may have the same function as a reality more fully perceived. This equivalence in function from the standpoint of action and the results of action is what truth means in actual practice, and thus the pragmatist's criterion expresses what truth *is*, while the 'ideal' theory of the intellectualist gives the correct account of the instruments of judgment (*i.e.* ideas) and therefore of truth. There is absolute truth when the predicate of a judgment is equivalent in function to any purpose that ought to be recognised, and we can discover by *intuition* what these relevant and obligatory purposes are. An ingenious argument in favour of this culmination is that it is the scientific outcome of pragmatist theory. To the pragmatist, verification is the test, and perhaps something more than the test, of truth, and this verification is in the way of equivalent working. We require, therefore, an ultimate verification in the case of the most general and fundamental truths, and this can only be supplied by intuition. Unfortunately the nature of this all-important intuition is (unintentionally, we may hope) left very obscure; we are warned, however, against believing it to be infallible, and are told darkly that "practice without intuition has often more truth than certainty; but intuition without practice has quite as frequently more certainty than truth".

The final chapter deals with the logic of proof, and seeks to avoid a dualism between deduction and induction. It also contains what is intended to be a trenchant criticism of 'logistic' (*i.e.* of mathematical logic). The value of this criticism may be estimated from the following passages on page 467. "And so we would claim to be justified in contradicting the assertion that, so far as we can say,

space is as likely as not either non-Euclidean or four dimensional. For such an assertion there has been found not a single good reason. . . . As a scientific hypothesis it grossly violates, as we have seen, the principle of parsimony. It runs counter to practical need, to common sense, and to immediate intuition. . . . And so also with regard to the notion of infinite collections. . . . Experience and 'rational intuition,' when we are sufficiently critical, disallow the notion. An infinite collection, if there could be such a thing, would be a collection such that adding to it would not increase it, and subtracting from it would not diminish it. But we know, by intuition capable of enduring the severest criticism, that there can be no such collection." Despite these remarks, however, the book concludes with an insistence on the absence of dogmatism that has characterised its argument, and with certain regrets that it 'may not have been, in a possible sense of the term, eclectic enough'.

It is necessary to give some account of the constructive statement of the theory of 'critical realistic epistemological monism' in chapter xiv., since the greater part of the argument leads up to it, and the rest of the argument is, in part at least, a justification of this central thesis.

The theory consists essentially of a defence of the distinction between primary and secondary qualities on the lines of an inverted Kantianism. Thus, if Kant's doctrine is taken to mean that sensory elements are given to us, and that the forms of space and time are *a priori* contributions of the mind, the inverse theory is that the secondary qualities are created by the mind, and the primary merely revealed to it. We learn, accordingly (p. 323), that "the secondary qualities are created, and thereby the primary qualities are revealed". Judging, apperceiving, imagining, etc., are creative activities of the mind, and without some of them there would not be perception. But the awareness of primary qualities is also involved in perception, and these the mind does not make but finds. The author claims that this is the only feasible solution of the tangled problems of perception. Unlike the realist he need not be troubled by the existence of hallucinations, dreams and errors, for he can trace these to their subjective sources (in connexion with a neural organism). He can do justice to the traditional arguments in favour of the *esse-percipi* doctrine of sense-data without deserting reality, like the idealist, or shielding his eyes from it, like the agnostic. He can agree with science and common sense, and if any trivial difficulty remains concerning the accuracy of our perception of space and time themselves, we can readily remove it by a little dose of pragmatism. We soon learn to correct errors of visual perspective, and should, for practical purposes be content with the approximate infallibility of touch. Any errors concerning remote objects seen still imply a 'location' which is accurate enough for practical purposes. One wonders what a mountaineer or an artilleryman would say to this.

Pragmatism often seeks strange company, but surely it is curious to find pragmatism in conjunction with the remark that "primary qualities are transcendently real; but some of them are sometimes empirically real, and this circumstance makes all the difference between helpless total ignorance of reality and knowledge capable of almost unlimited progress" (pp. 326-327). It is strange, again, that a critical, and therefore undogmatic, theory should assume without criticism or, indeed, inquiry, that there is a single realm of tri-dimensional Euclidean space, that we can 'locate' accurately within it, that in some unexplained way the creation of secondary qualities reveals this 'location,' and that the well-known arguments which prove that the perception of primary qualities are relative to the subject at least as certainly as the secondary can be entirely disregarded. And would it not be strange if this theory solved the difficulties connected with hallucinations and dreams? The question at issue in that case has nothing to do with the distinction between primary and secondary qualities since it concerns both kinds of qualities equally or not at all. Again if secondary qualities are created and primary qualities are not why should there be no introspective evidence of this radical difference? Finally we may ask whether creation through psychical activity is the same thing as the cognition of what is created. If it is, there is a dualism in knowledge since the primary qualities are not so created. If it is not, the problem of knowledge still awaits solution.

What a pity it is that metaphysical problems are frequently not quite so simple as they look.

JOHN LAIRD.

Le Scuole Ionica, Pythagorica ed Eleata (I Preatristotelici I.). By ALDO MIELI. Firenze: Libreria della Voce, 1916. Pp. xvi, 503. Price 12 lire.

THIS is the first volume of a projected work on the general history of science, and it deals with some of the predecessors of Aristotle. The part on the pre-Aristotelians will be composed of Chapters on the Ionian School, the Pythagorean School, the Eleatic School and Heraclitus, characteristics of the science of the two first schools (also Empedocles and Anaxagoras), Greek medicine and the writings of Hippocrates, the atomists, the development of mathematics before Euclid, the development of astronomy before Aristotle, the Sophists, and Plato and his position in the development of scientific thought. Of these ten Chapters the present volume contains the first three. To each of these three Chapters is appended a long bibliography and index, and it would perhaps have been an advantage if another index for the whole volume were added at the end.

Prof. Mieli is well known to readers of *Scientia* and *Isis* as one

of the leading members of the modern school of historians of science. As distinguished from the older historians of science, the new school does not treat of each science separately but of all sciences and sometimes even religions and arts at the same time. It is instructive to read, on p. 142 of the volume under review, the remarks of Prof. Mieli on Whewell's histories of sciences and the defects of treating independently the histories of different sciences. The man who did most to found the new school was the gifted Paul Tannery, and the ambitious work of organising and co-ordinating historical work on science in general was carried on with great enthusiasm and ability by M. George Sarton, who published his excellent review *Isis* near Ghent for rather more than a year until the atrocious devastation of Belgium took place. Then M. Sarton, like many other literary men of Belgium, was forced to leave his work and his country. Prof. Mieli was one of those who worked with M. Sarton to make *Isis* worthy of its founder's ideals; this volume is dedicated to M. Sarton, and there is an interesting tribute to him on pp. xiii-xiv. Besides the influence of Tannery and Sarton, that of Ernst Mach has been very important and is mentioned on p. viii.

Prof. Mieli's ambitions are not limited to Greek science; that is only one of the stages in a projected history of scientific thought to the end of the eighteenth century (p. xii). There seems to be a certain unanimity amongst scholars that at present anything but histories of very special departments of knowledge should stop with some period just before the nineteenth century began; and this is also Prof. Mieli's opinion (p. xi). It seems to the reviewer rather a pity to postpone the writing of a history simply because nobody knows what may be the future lot of a present speculation. To take an example from mathematics, a historian of the present would be quite alive to the fact that it would be a pity to ignore the work of the British mathematicians of the first half of the nineteenth century on the calculus of operations and functions, because of its importance in connexion with the modern subject of integral equations; and yet it was thought fit by Cayley, when he wrote his article 'Function' for the ninth edition of the *Encyclopaedia Britannica*, almost to depreciate these researches. The fact that, fifty years hence, mankind will have forgotten much about the theories of the present day, must, it would seem, counterbalance the disadvantage that we cannot wholly know which, if any, of our theories scientific men of fifty years hence will think important. If writing history is postponed to the future, men of the future must have a very wrong impression of how and why we did things.

The first Chapter (pp. 3-207) is on the Ionian School, and deals with the Greeks of Asia Minor and their relations with Egypt, Thales and his meteorological and astronomical knowledge, the introduction of mathematics into Greece, the speculations of the Ionian philosophers on 'the primordial element,' the astronomical

and cosmogonic ideas of the Ionians and their geological, biogenetic, and anthropogenetic theories, Ionian geography, and the technical arts with the Ionians. There is a classified and critical bibliography (pp. 136-207) which contains some very valuable notes on books. A very pleasing feature is that the author states quite frankly when he has not read any particular book mentioned. The bibliography seems to be fairly complete, but less so as regards British works. The English translation of Gomperz's *Greek Thinkers* might have been mentioned on p. 146; the second edition (1908) of Burnet's *Early Greek Philosophy* and Burnet's work of 1914 on *Greek Philosophy from Thales to Plato* have not been seen by the author (pp. 147-148); the English translation of Ueberweg's *History of Philosophy* is not mentioned (p. 149). It is a pity that the author (p. 171) has not seen Hankel's *Geschichte*, as it seems to have been the first book in which the importance of Zeno's influence on mathematics was emphasised. We should have expected to see this fact mentioned somewhere between p. 483 and p. 489.

The second Chapter (pp. 211-278) is on the Pythagorean School and deals with Pythagorean arithmetic, geometry, acoustics, astronomy, other scientific conceptions of the Pythagoreans, and Archytas and the Delian problem. The Chapter is followed as before by a critical bibliography. Perhaps a somewhat fuller account of the cosmology of the Pythagoreans would have been desirable, principally because this cosmology throws some light on the question as to whether the Pythagoreans held a crude form of the atomic doctrine. It will be known to many of the readers of MIND that Prof. Mieli has sustained the thesis, in *Scientia* of 1913, that, after the time of Zeno, the Pythagorean doctrine was transferred from geometry, where it had proved to be inadequate, to the theory of matter. This thesis is not mentioned, by the way, in the present work; and it does not seem true that any Greek philosopher held that matter was a sum of points while space was not. A distinction between matter and space was not made by the earlier Greek philosophers, and consequently the question of Pythagorean atomism is relevant to the question of what may be called geometrical atomism with the Pythagoreans.

With regard to the bibliography, one point may be mentioned in particular: although Prof. Mieli speaks disparagingly of Hoefer's *Histoires* in *Scientia* of January, 1915 (cf. p. 186 of the present book), it might be mentioned that Allman in his *Greek Geometry from Thales to Euclid* (p. 2) has remarked that the work of Hoefer on the Pythagoreans was occasionally useful to him. Here it may be also noticed that Prof. Mieli seems wrong when (p. 174) he speaks of Allman's book as 'of a somewhat philosophical nature'; Allman's book contains good historical research, and Prof. Mieli might well have made use, for example, of Allman's useful remarks, on his pp. 30-31, on the meanings of the word 'gnomon,'

to supplement what is said on pp. 242-243 of the book under review.

The third Chapter (pp. 381-503) deals with the Eleatics and Heraclitus, and contains an account of the works of Xenophanes, Parmenides, Zeno, Melissus, and Heraclitus, and a critical bibliography. Although, in the note on p. 491, Prof. Mieli expressly disclaims any intention of giving a complete list of papers concerned with Zeno's arguments, it would have been relevant to refer to Gaye's very sound interpretation of Aristotle's version of Zeno's fourth argument on motion, and to Mr. Russell's illuminating discussion of Zeno's arguments in his *Principles of Mathematics* of 1903, and still more so in his 'Lowell Lectures' of 1914. It may be mentioned here that a very complete account of the fortunes of Zeno's arguments on motion down to modern times has been given by Prof. Florian Cajori in the *American Mathematical Monthly* for 1915.

Throughout the whole volume there are very useful quotations in the original Greek of the passages on which the historical work is founded. The interpretation is principally that of Paul Tannery, and, as we should expect, great use is made of Loria's *Scienze esatte nell' antica Grecia*. We should have liked to see the extremely valuable testimony of Plato, in his *Parmenides*, as to the relation of Zeno's thought to that of Parmenides; for this testimony explains so much that would otherwise be obscure, and is still somewhat obscured by the interpretations due to Tannery and Milhaud.

The central point of interest in a study of the views of the Pythagoreans and Eleatics is the apparent contradiction in assuming a continuum to be composed of points. This apparent contradiction has always exercised and is still exercising philosophers. Modern mathematicians and logicians have really attained to a consistent theory of a continuum made up of points; but this does not affect philosophers like M. Bergson. The chief points, then, in a history of the Pythagoreans and Eleatics when viewed from this standpoint would seem to be the following. The Pythagoreans held that geometrical points were 'units having position'; and it has been very reasonably held by Tannery and others that this shows that they considered geometrical figures to be composed of points just as a number is of units, and thus, though of course they did not say this, of a finite number of points. This theory was refuted both by the Pythagorean discovery of incommensurables, which the Pythagoreans seem to have regarded rather as a skeleton in the cupboard, and by the arguments of Zeno (cf. pp. 231, 240-241, 272, 440-444, 447-448). There is one point in accounts of Pythagorean doctrine which needs definite refutation if this theory is to hold good: it is the assertion of the neo-Pythagoreans or neo-Platonists that the Pythagoreans distinguished between the continuous and the discrete (cf. Allman, *op. cit.*, pp. 23, 48; Moritz

Cantor, *Vorlesungen über Geschichte der Mathematik*, vol. i., 3rd ed., Leipzig, 1907, p. 156). According to the above theory, it would seem that the Pythagoreans believed that what seems continuous is really discrete, and were rather puzzled and annoyed by the existence of irrationals—which appeared to others to be a refutation of their theory and to them to be an inexplicable mystery.

Another problem is presented by the question as to whether the Pythagoreans discovered an irrational by considering an isosceles right-angled triangle (pp. 267-272) or by considering the finding of means (pp. 253-256; cf. Allman, *op. cit.*, pp. 42-43). However, the well-known parallel passages in Euclid and Aristotle, in addition to other reasons, make it very probable that the discovery was made in the former way.

All serious inquirers into a scientific or philosophical theory are really concerned with its truth or falsity far more than with anything else. Such facts as that so-and-so thought such-and-such things at such-and-such a time, apart from any evidence for or against the truth of these things, cannot really be considered to be anything else than a merely frivolous piece of information. Yet the collection and statement of such pieces of information is regarded by many otherwise intelligent persons as the subject-matter of the history of a branch of thought. If this opinion were true, a history would be merely a collection of statements by authorities without authority. It is difficult for us to imagine that any proposition should ever have been believed for reasons which greatly differ in nature from those which induce us to believe statements at the present time. We are prone, and quite rightly so, to believe that a theory which is or was held by a person of ability who had read and thought about that theory is worthy of consideration. But this belief of ours, if it is not mistaken, must be capable of being substantiated in a way in which it is not necessary to mention names or dates or places. Names and dates and places have much the same function as definitions in mathematical logic: simply to shorten our means of expression.

Thus the history of a science or a philosophy is at the bottom an objective description of the subject-matter of that science together with its developments. The fact that this description is arranged in order of time of discovery has a double advantage. In the first place it presents to us the knowledge that has been attained at certain periods, and thus gives us a valuable lesson in research at the present time; for the ways in which seekers after truth have set about their business in the past is very much the same way that we ought to now. In the second place, and here is, it seems, the great reason why we need a *general* history of science—other problems appeared at the same time and often seemed to be relevant when further research showed them to be irrelevant to the main question, or *vice versa*. Such problems sometimes, accordingly, disappear in the first logical statement of a theory; but

these problems sometimes tend to reappear in the minds of other thinkers.

These advantages are, of course, of a psychological nature, but if we are interested in the truth we must to a certain extent be interested in the discovery of the truth, although naturally we must avoid confusing process and result. The historical order has also an advantage over the order adopted in most text-books in that it makes no attempt to begin with what is logically the most fundamental. We are all acquainted with the ridiculously unstable position between ease of learning and outward respect for logic in which most text-books find themselves.

The ideal of scientific history is the exhibition of the way in which a study of part of the psychological 'how,'—the path by which trains of thought have been conducted by suggestions from other methods and conceptions, but not the influence on it of all circumstances such as food and happiness—leads to a ready and thorough understanding of the logical 'how'—the exhibition of the logical principles which lead to a certain truth from fundamentals. The period with which the present volume is concerned is rich in discussions which are of the utmost value for us at present, and the careful study of the general history of science enables, in the fullest manner, all those problems to be studied together which afterwards showed themselves to be relevant or irrelevant in spite of appearances. To this end the volume under review has contributed worthily; upon it can be built by those who are interested in the future of our knowledge.

PHILIP E. B. JOURDAIN.

The Principles of Understanding. An Introduction to Logic from the Standpoint of Personal Idealism. By HENRY STURT, M.A. Cambridge University Press. Pp. xiv, 302.

In a previous volume Mr. Sturt defined Personal Idealism as viewing human experience, "not from the visionary and impracticable standpoint of an absolute experience," but from the standpoint of human experience itself; and as emphasising the volitional side of human nature. The fundamental fact from which it set out was personality as real and concrete. The present volume studies thought or understanding from this standpoint. *A priori* laws are set aside as not existing, and understanding is regarded as not merely seeking truth, but as being subservient to "the formation of purposes and the satisfaction of desires" (p. 4). Logic studies understanding in all its concreteness; "its purpose is to explain the processes of our own minds and of persons whom we know" (2). It is defined elsewhere as "the theory of understanding" (1), or "the theoretical account of the actual processes of human understanding" (vii).

But it is clear that these definitions are not meant to be final, since they are not sufficient to discriminate between the study of understanding which constitutes Logic and that which constitutes a branch of Psychology; and the general treatment of the subject indicates that there *is* some distinction. I do not think it would be easy for one with Mr. Sturt's views to give a satisfactory definition, but I think it could be done; and if we are to have two sciences and not one, it is desirable that we should know in what their standpoints differ. Mr. Sturt tells us for instance that there is much good Logic in the pages of Stout's *Analytic Psychology*; does it, we ask, comprise just those portions which deal with thought, or are some of these portions psychological and not logical? To put the question otherwise, what is meant by "theoretical" in the definition of Logic?

The present volume leans rather to the side of Psychology. It is an *introduction* to Logic, "not in the sense that it works quickly over the main field of study, but in the sense that it considers with fulness some preliminary matters which seem to need special consideration at the present juncture of philosophy" (8), *viz.*, the nature of understanding as spiritual and not mechanical or sensationalistic, and again as intimately bound up with the passionnal or dynamic element of the soul. From this point of view the book can be regarded as a contribution to the psychology of thought. But its aim is not merely this, for it endeavours to give some useful information as to how the business of thinking may be more efficiently carried on. In this respect it has points of contact with Dewey's *How We Think* and with much of Graham Wallas's *Great Society*. Mr. Sturt's discussions range over an extremely wide field in a manner which we might be tempted to describe as perfunctory were it not so clear that he is determined not to lose hold of his central questions even for a moment. The result is that we are never in doubt as to his views; and this is clear gain. At the same time the impression is continually left, no doubt as a result of his mode of procedure, that the writer underestimates both the strength of his opponents and the difficulties of adjusting his own views to all the facts; and this is unfortunate. The book may be recommended as a courageous attempt to introduce clearness into a subject which is often beset with the confusing complexity which comes of an endeavour to do justice to all the aspects of a difficult question. It should act as a challenge to other thinkers to make their conceptions (or at least their expositions) more unitary.

The central doctrine of the book is contained in the chapter on Noesis. Noesis is the non-sensuous, active element in understanding. It is the apprehension of a whole, which is involved in every act of recognition of a whole as such, and which guides all our thinking in solving a problem. It can take place without any apprehension of the parts. It is essentially similar to Stout's

noetic synthesis, but differs from that conception in being applied to explain all those cases ordinarily ascribed to association. Noesis is in the second place freed from the connexion with psycho-physical dispositions which characterises Stout's account of implicit apprehension ; and thus Mr. Sturt makes a very full use of the notion of sub-consciousness. Lastly, Mr. Sturt appears to make no distinction between the apprehension of the form of a whole and the implicit apprehension of a whole.

That feature of the object which is apprehended in noesis, Mr. Sturt calls its "form," or its "noetic pattern". Noesis is thus described as the "cognition of form" (35). But it is doubtful whether all the cases Mr. Sturt describes can genuinely be brought under a single conception. A study of his examples of forms or patterns will show the extreme width of application of these words.

Form may be opposed to matter as one aspect of a whole. It may e.g. be simply the spatial arrangement of the parts. The word "pattern" is specially appropriate here. In general, form is that in virtue of which we recognise a whole as this whole and not that (33-35). Another set of examples shows us form as the general vague idea of a whole, from which we start in thinking, and which conditions our thought of the appropriate parts; e.g., the first suggestion of an invention, or an idea for a poem. Again, form may be some feature or aspect vaguely seized, as when we recognise a dimly seen object as a thing with a tail, or have an idea that a name we cannot remember begins with a B. Again it may be below consciousness altogether, as when after hearing a tune a person forgets all about it and suddenly remembers it some days later. In such cases, says Mr. Sturt, "I believe that the agent retained all along the noetic formula of the tune, without being able to articulate it" (72). "Noetic formula" here seems to do the duty of Stout's psycho-physical disposition.

These meanings are sufficiently varied : in all of them (except the first) we have, according to Mr. Sturt, something essentially inarticulate, i.e., which cannot be realised sensuously, but which conditions and guides our thought. In all we have something "synoptic, schematic and coactive" (for the meaning of which terms we refer the reader to Mr. Sturt's book). But there are two cases which do not appear to come entirely under this description. (a) The pure form—form at its best—would be akin to a mathematical formula such as $S = \frac{a}{1 - r}$. For example, the tune-formula of a song flashes as a whole into a composer's mind, and he has simply to articulate it in detail (53). Again, "The noetic scheme of a mechanical invention would be its essential formula expressed in the purest way, like, e.g., the algebraic formula $ax^2 + bx + c = 0$ " (58). But if a noetic scheme is something which is "not articulate, not sensuously expressed,

and cannot be apprehended sensuously" (90), it would seem to be the very opposite of an algebraic formula, which is essentially articulate, essentially expressed, and in apprehending which we have apprehended all the cases (which are not parts, of which it is the schematic whole—wherein the analogy breaks down still further). (b) At the other end of the scale we have what Mr. Sturt calls a "primary pattern"; as in the case of the old woman who sees a complicated event, and in recalling it is unable to do more than repeat the incidents in the order and detail in which they occurred. Her "noetic pattern" appears to involve the detail (69-70). But "noetic pattern" involves a separation of form from matter of a kind which hardly seems to occur in this case. I would suggest that we have something closely akin to this in those cases which Mr. Sturt describes as showing pure form. The musician who has what can be compared with an algebraic formula has, I think, nothing less than the whole song completely articulate.

Something may be said as to Mr. Sturt's position regarding association. His principles are those of systematic association (where the form or system of the whole conditions the emergence of the parts—connexion of whole with part) and inter-systematic association (where a part within one whole conditions the passage to another whole of which it forms a part—connexion of part with whole). Both principles are noetic. Now in so far as inter-systematic association takes place without any modification of the second whole due to the nature of the previous whole, we have simply a case of what would ordinarily be described as association, and explained as the excitation of a total disposition. Again, there appear to be cases which would have to be described in Mr. Sturt's terminology as *intra*-systematic association, where a part within a whole determines the revival of another part. The mechanical explanation is sufficient for these cases.

We can go further. Let us suppose that the first psychologists had held Mr. Sturt's views—*i.e.*, suppose that they had regarded as unthinkable any mental process not conditioned by the apprehension of a whole, or pattern. Still the *idea* of another kind of process would soon be suggested. It would be found for instance that, within the same thought-process, certain quasi-mechanical factors (*e.g.*, repetition, contiguity within the train, recency of connexion) influenced the strength of the connexion between any two aspects or parts. Also, the weaker the thought interest, the stronger these factors became. The suggestion would then arise, of a consciousness for which these factors were the only ones; and although it would be unthinkable as an actually existing consciousness, yet it would be useful as a limiting conception. But a limiting conception at one end suggests that its pure opposite is equally a limiting conception. And thus a purely mechanical consciousness, working on association alone, and a purely spon-

taneous consciousness, working on thought-trains alone, would be seen to be limiting conceptions by the aid of which to understand the workings of all actual conscious process.

But while there appear to be grounds for holding that Mr. Sturt's conception of noesis is too wide to do justice to the psychological facts, it seems clear that it could be replaced by a more restricted view without vitiating the arguments of the rest of the book. In particular, the account of judgment and inference, as acts of noetic synthesis suffused with passion, would in no way suffer. This, then, would have to be discussed on its own merits. Mr. Sturt's treatment of these points is clearly preliminary, and would naturally fall within a more systematic and detailed "Logic". It is to be hoped that Mr. Sturt will give us this at a no distant date.

L. J. RUSSELL.

VII.—NEW BOOKS.

Proceedings of the Aristotelian Society, 1914-15. Pp. 441. Williams & Norgate.

THIS is a very thick and interesting volume of Proceedings. The size is due to a Symposium on the *Import of Propositions*, in which Miss Jones and Messrs. Bosanquet and Schiller took part. A very wise innovation is that each of these philosophers write two articles ; we can thus see how they meet each other's criticisms. There is also another Symposium on *Instinct and Emotion*, in which the parts are taken by Dr. McDougall, Mr. Shand, and Prof. Stout. It consists of a rather acrimonious discussion between the first two psychologists on points raised by Mr. Shand's recent work on *The Foundations of Character*. Prof. Stout plays the congenial part of a detached critic of both. No less than four articles are directly concerned with Mr. Russell's *Lowell Lectures*. These are Prof. Bosanquet's *Science and Philosophy*; *Phenomenalism* by the present reviewer; *Complexity and Synthesis* by Mrs. Adrian Stephen (Miss Costelloe) ; and *Mr. Russell's Theory of Judgment* by Prof. Stout.

The paper by Mrs. Stephen (surely far the best of Bergsonians) is very able and interesting. She says that *prima facie* there are two kinds of sense-data, complexes and syntheses ; the former appear to consist of terms in relations, the latter do not. Bergson and Russell agree in recognising this distinction, but Russell tries to prove by Stumpf's argument that what appear as syntheses are really complexes. Mrs. Stephen then criticises Stumpf's argument. We have three sense-data (*e.g.* colours); *a* looks the same as *b*, *b* looks the same as *c*, but *a* looks different from *c*. Stumpf and Russell conclude that, since sameness is transitive, *a* cannot really be the same as *b* or *b* cannot really be the same as *c*. Mrs. Stephen replies that this argument only holds if we suppose that syntheses consist of *logical* terms and relations. Now this is just what Bergson denies. It seems to me that Mrs. Stephen confuses two different points. (i.) Are *a*, *b*, *c*, etc., and their sensible relations, terms and relations subject to the laws of logic ? and (ii.) Has the relation of *looking alike* the same logical properties (*e.g.* transitivity) as that of *being alike* ? She appears to think that if you answer (ii.) in the negative you must answer (i.) in the negative ; but this does not follow at all. All that follows is that we cannot tell whether *b* does or does not differ from *a* and *c*, not that *a* and *c* and their sensible relations do not have logical properties. I would like to point out also that it is not true that to say that datum *a* differs from datum *b* though they look alike is *exactly* like saying that an elliptical sense-datum is really round because we believe that the corresponding physical object is round. The shape of a sense-datum is a *positive* characteristic of it ; the 'looking alike' of *a* and *b* may be merely the *absence* of an observable difference between them. Mrs. Stephen then goes on to discuss the nature of analysis. She holds that when we analyse a synthesis we do not find parts that were there all along, but replace it by a different datum, *viz.* a complex. And the relation between the two is that the complex is a fragment of the synthesis. But this seems to me to give away her case that syn-

theses have no parts ; for if a synthesis has *no* parts how can a complex arise by dropping *some* of the parts of the synthesis ?

The Symposium about propositions is too long for me to be able to give a fair summary. It brings out very well the strong and weak points of three very different views of logic. Miss Jones's original paper is mainly a reiteration of her view that S is P asserts identity of denotation with diversity of intension. I will just make one comment. If "Smith is human" means 'The denotation of *Smith* is a part of the denotation of *human*, whilst their intensions differ,' it will follow that Smith is human is partly about the words *Smith* and *human*. If so, when we assert it we make an assertion which is partly about words. Now this seems to me false ; we make an assertion *in words*, but not in any sense *about words* when we assert that Smith is human.

Prof. Stout's paper contains two parts, a criticism of Russell's theory of judgment and a note on his theory of knowledge by acquaintance. Prof. Stout accepts the three conditions laid down by Russell as necessary for any theory of judgment, but denies that they are sufficient. He adds (a) that correspondence must be between actual fact and what is before the mind, not between actual fact and the judgment as a psychical complex ; (b) what is before the mind must only differ from actual fact in the single respect of not being actual fact ; (c) the correspondence must be asserted by the judging mind. I actually have before my mind the general characteristics of an actual fact, but these leave open certain alternative specifications. I am aware of *what* these are, but not aware *which* is fulfilled. If I now go on to drop all the alternatives but one from consideration and to act as if this alternative were fulfilled I believe that this alternative is fulfilled. If it be fulfilled in fact this belief is true ; otherwise it is false. Prof. Stout's view of acquaintance is that we can never be acquainted with anything as distinct from its characteristics ; that a *thing* with characteristics is just a peculiar kind of complex whose elements are the characteristics ; and that the characteristics of a particular are themselves particulars, the only sense in which they are universal being that they are also elements (together with the like characteristics of other things) in another kind of complex, *viz.* a class. Knowledge by description is as ultimate as knowledge by acquaintance ; Russell's attempts to explain the former in terms of the latter are circular because they involve the notion of a variable which itself involves descriptive knowledge.

Dr. Aveling's paper on *Some Theories of Knowledge* advocates a return to something like St. Thomas's view, as a *via media* between Pragmatism and Absolutism. The paper brings out the extraordinary strength and good sense of St. Thomas very well.

I must also mention a very acute paper by Prof. Lloyd-Morgan on *Berkeley's Doctrine of Esse*, which is unfortunately too long and too technically expressed for me to be able to give a fair summary. Mr. Cook criticises *The Ästhetic of Benedetto Croce* not more severely than it deserves. Mr. Tudor Jones writes on the *Philosophy of Values*, and Mr. Cole on *Conflicting Social Obligations*. He holds that the state is only one institution among many in a society and that the ultimate sovereignty does not reside in it but in the totality of organised institutions. Prof. Bosanquet writes a short note on Mr. Cole's paper.

The opening paper on *Science and Philosophy* is by Prof. Bosanquet. It is a criticism of the view of philosophy put forward by Mr. Russell in his *Lowell Lectures*. It is argued (a) that philosophy should not hesitate to investigate objects of desire (*e.g.* immortality) merely because they are desired. We can study what is desired without allowing our desires to bias our conclusions. I hardly imagine that Mr. Russell

would deny this; it seems to me that on his view philosophy would study both (i.) good and evil as general characteristics and (ii.) whether certain other characteristics are necessarily connected with goodness (*e.g.* pleasantness). All that it could omit as too particular is whether definite institutions in the actual world are good or bad. (b) On Russell's view philosophy would be merely 'the theory of theory'. This is a mistake; but Prof. Bosanquet corrects it later by introducing the alternative that philosophy would be the 'theory of the objects of theories'. But why not simply say that it is the theory of the most general characteristics of all possible objects? We then at least avoid the danger of confusing philosophy with theory of cognition, a danger which Prof. Bosanquet points out, but into which Mr. Russell seems the last person to be likely to fall. (c) The function of philosophy is to see the universe as a whole, and not to concentrate its attention either on particular existing parts of it or on their general relations. Philosophy is allowed no working hypotheses and has a stricter standard of verification than any special science. Curiously enough, Prof. Bosanquet also holds that philosophy is national and personal like art. I should have thought that this was hardly compatible with the high standard of verification demanded in philosophy; I should also have thought that what was strictly beautiful in a work of art was not national.

The only other paper is an interesting one by Mr. Arthur Robinson on the *Philosophy of Maine de Biran*, a French psychologist who in some ways anticipated Bergson.

C. D. BROAD.

The Origins of Christianity. By THOMAS WHITAKER. New edition with prologue. Pp. xlii, 212. 1914. 3s. 6d. net.

The prologue prefixed to the third edition of his book contains an interesting account of the stages of Mr. Whitaker's later progress in scepticism about the books of the Bible. He began with accepting Van Manen's position about the Acts and the Pauline Epistles; then he was led by Mr. J. M. Robertson's writings to doubt the historicity of Jesus. His book, which was first published in 1904, consists mainly of a statement of Van Manen's conclusions about Romans and Corinthians, with a sketch of his own views of the genesis of Christianity.

In his new prologue he tells us how he has been led on the ground of the Old Testament history from general acceptance of the results of Higher Criticism which places the prophets before the Law, to the more sceptical position that the Law came before the Prophets. Mr. Whitaker says that this edition of his book is the definitive one; he has come to the end we suppose of his sceptical progress. But perhaps some further steps in the same direction are still open to him. He still believes that there was a Paul who, if he did not write any letters which we possess, yet made journeys in the service of the religion he professed; and that the journal of which there are fragments in Acts contains true information about him.

The book is issued for the Rationalist Press Association, and with others of a similar origin is of the same class with the writings of Drews, Kalthoff and others on the Continent. One who believes that the books of the New Testament are in the main historical and tell of men who really existed and things which really happened, however far away from us in thought as well as in time and space, can only notice a book like this by pointing out elements in the New Testament which strike him as real and historical, and asking how on the sceptical theory such things came to be thought or written. I shall state one or two such observations.

1. Mr. Whitaker does not believe the ethical teaching of Christ to be original to the Christian movement. "There is no vestige of evidence," he says, "for any early or earliest Christianity that was simply a moral rule of life." Now the "Sayings of Jesus" which scholars recognise as a common source of the first and third Gospels and which they are certain was a book or collection contemporary with the second Gospel and independent of it, this work represents just that for which our author says there is no evidence. The Sayings of Jesus, on which Matthew and Luke both drew largely, shows Christianity when it was little more than an ethical doctrine; when the death of Christ had not yet become of cardinal importance for believers, nor His resurrection, when Jesus appeared as a Prophet, as the last Prophet, full of the sense of His own authority and importance, and preaching moral reformation in every department of life. Mr. Whitaker when he prepares another edition of his book will have to take account of the Sayings of Jesus which both Matthew and Luke use largely, and tell us whether they do not give evidence of a simple early Christianity of a period before the dramatic formation of Christian doctrine had taken place, and taking us, along with Mark, to a period not very far removed from the life of Jesus.

It is when we try to work out Mr. Whitaker's theory of the formation of the Gospels, without any historical figure behind them, that we see how difficult it is. Supposing that Jesus really lived and taught, the narratives are difficult indeed, many a deduction has to be made from their statements, many an influence is seen to have contributed to their formation, Old Testament story, later church doctrine of the person of Jesus, the usages of the church at a somewhat later period; but a nucleus of fact remains, many things are found which produce an impression of reality. If He never lived at all—how did all these narratives come to be formed, why are such apparently small and trivial incidents narrated, the cure of Simon's mother-in-law, Jesus' going out of the house before day and the disciples running to fetch Him back again—and fifty others? A commentary on a Gospel is required to show how this can possibly have taken place, if the hero never existed.

It would especially be necessary to account for the parables if they are not from Jesus. Pieces of this sort are not so commonly met with in literature that the occurrence of thirty or forty of them in the Gospels can be treated as calling for no notice or explanation. It is difficult to find in other literature pieces which are really parables and which can be at all compared with those of the Gospels. These latter belong to the same period, and the same condition of society; they are all marked by the same gift of keen observation of man's character and motives and ways of acting, the same kind and tolerant spirit. And the genius which gave utterance to them appears in the Synoptic Gospels only, and neither before them nor after them. If Jesus really lived, they are readily explained. He was a great artist in words, He had the gift. If He never existed what explanation can be given of them? Will Mr. Whitaker tell us in his next edition?

Observations of the same nature have to be made as to the Pauline Epistles. If they are entirely fictitious, how does it come that the Corinthian Epistles, for example, have such a wealth of detail in them which is not directly religious nor in the interest of any doctrine? Paul's journey and changing plans of travel, for instance; what led the writer to invent all that and put it in? Or what is said of Paul's financial independence, how he values it, how his adversaries envy it, how he keeps it for Greece and acts otherwise for Macedonia. For what end was all this made up? Or the matter of the collection for the poor Saints; the beginning of the undertaking in 1 Corinthians, the back-

wardness of the Corinthians to take up the scheme, the readiness of the Macedonians ; how Paul is coming for the money, and what persons are coming with him for it, and the qualifications of each of them ? Why invent all this, and put it together not clearly and simply but with many a point omitted which is essential to full understanding ? The scholar who can regard the Corinthian Epistles as entirely fictitious and made up, either has never studied them with care or is wanting in the sense for historical reality. This is true in a higher degree of the Corinthian than of the other Epistles, but with regard to the first six in order of time, as well as Colossians and Philemon, it must be said that historical reality stares one in the face from each of them when it is sufficiently studied.

Mr. Whitaker is full of learning and information about many periods of history and many problems of literature. And he gives his reader the bracing sensation that he is bent on truth and nothing else and will seek for it till he finds it. He will give credit for some degree of the same virtue to one who has reached other conclusions than his own.

Pragmatism and the Problem of the Idea. By the Rev. JOHN T. DRISCOLL, S.T.L. New York : Longmans, Green & Co., 1915. Pp. xxvii, 274.

So long as the Roman Catholic Church retains St. Thomas Aquinas as its official philosopher, it will from time to time be incumbent on its apologists to show that the fixed categories of Scholasticism are applicable, not only to the Greek speculations which it endeavoured to render subservient to the purposes of the Church, but also to all the novelties of thought which have occurred since, in such a way that the 'errors' of modern thought have all been corrected by anticipation. Hence the demand for books like Father Driscoll's, their general method and their polemical attitude. Hence also the difficulties which result from forcing (highly effervescent) new wine into old bottles. It can hardly be said that Father Driscoll has surmounted the difficulties of his task very successfully, of that his contribution to this sort of literature compares favourably, either in his exposition or in his criticism of Pragmatism, with Father Leslie Walker's *Theories of Knowledge* in the Stonyhurst Philosophical Series, which I had the pleasure of reviewing in No. 76. For though, like all Scholastics, he has been properly trained to base his case on references and quotations and to separate exposition from criticism, and does not set himself above these duties like so many modern controversialists, he has unfortunately no very clear idea of what the pragmatist movement is about and how it developed out of the problems of modern philosophy ; and this detracts seriously from his classification and selection of topics. His knowledge of the literature also is restricted to a part of the literary output of his representative pragmatists, and so he often fails to perceive the connexion of the pragmatisms he examines with the other doctrines of their authors. His introductory chapter is slight and shallow, and contains such nonsense as that the influence of James and Bergson is materialistic and sensual, and that Pragmatism "professedly proclaims that might is superior to right, and that trickery and dishonesty are superior to uprightness and truth" (p. 15). Chapter ii., on 'Empirical Pragmatism', deals, very inadequately, with James and Dewey. He derives their doctrines from the empirical psychology of Mill, Bain and Spencer, "considered as functioning or evolving" and regards it as a 'sensism, an evolutionism and "a so-called Scientific Method". He does not grasp the importance of substituting a functional for a structural psychology,

tilts against Darwinism, declaring Mendel's Law to be "the only real advance in Biology within fifty years," but to be "verified of vegetable life only" (p. 22, but cf. p. 263), and robs Cambridge of Prof. Bateson in favour of Oxford. The pragmatic method is criticised thus: "we say that men of science explicitly contrast working-hypotheses with established truths and give provisional assent only to the former. It is *Scepticism* to hold that all scientific theories are purely working-hypotheses, and it is false to apply the working-hypothesis to mental life and call it a scientific method" (p. 23). Father Driscoll would hardly beg the question so confidently if he were more familiar with the experience which has driven so many scientists to the very notion of scientific truth which he dismisses so dogmatically. But apparently (p. 37) he thinks it possible to base science on "judgments whose truth is grasped without any process of inquiry," conceives the hypothesis as "a special kind of judgment whose meaning (*sic!*) is uncertain," and considers it 'scepticism' to question 'self-evident truths' and to start from doubts. Chapters iii. and iv. discuss somewhat more fully Royce's *World and the Individual* and *The Problem of Christianity*, as expositions of 'Absolute Pragmatism'. Their attitude may be gauged by the suggestion (p. 62) that "Professor Royce is evidently not familiar with the famous controversy as to the nature of universal ideas which played so prominent a part with the Schoolmen". As if every competent philosopher had not been keenly aware of the difficulties of the doctrine ever since the days of Plato! Royce's definition of 'idea' in terms of will is answered by the allegation "that intellect and will are different is an elemental fact of conscious experience"! My *Humanism* and *Studies in Humanism* are treated more fairly, in chapters v.-vii., though some of the references and quotation marks have gone wrong. I am indeed reproached with Idealism, Solipsism and Scepticism, but as Father Driscoll does not deal with my arguments on these topics I can hardly be expected to plead guilty. He does however argue against my contention that all thought is purposive, and declares it untrue, because I recognise the operation of selective attention on a more extensive psychical material (pp. 147-148). The objection, which is very obscurely put,¹ apparently assumes that what is not attended to is not 'in' the psychic process and that whatever can be conscious must be called 'thought'. But of course I could not admit either that what is not attended to *ipso facto* disappears from consciousness, or that 'thought' should be used so widely and loosely as to cover all awareness. As might be expected after this, Father Driscoll does not make much of a subtle book like Bergson's *Creative Evolution*, though about 100 pages are devoted to it. In his final chapter on Pragmatism and Scholastic Philosophy the author allows his dogmatism a free hand. He simply asserts that "the act of sense is totally different from the act of intellect" and has nothing in common with it. Both however "are in direct contact with things" (p. 271), and this guarantees their truth. Whence it would appear that the problems of error and of the application of 'ideas' to things and of the selection of the proper idea to a situation which is always susceptible of alternative classifications have not yet occurred to Father Driscoll. His theory moreover clearly commits him to the notion of a 'double truth,' secular and theological. As a philosopher he must hold *all* men to be infallible that are capable of self-evident intuitions, though as a theologian it is his duty to restrict infallibility to the Pope.

F. C. S. SCHILLER.

¹ I cannot understand it at all unless in the first paragraph on p. 148 s.f., "useless" is a mistake for "useful".

The Theory of Abstract Ethics. By THOMAS WHITTAKER. Cambridge : at the University Press, 1916. Pp. x, 126.

This admirable little book has a great deal of thinking and study behind it. Its thesis is the vindication of the ethical doctrine expounded by Prof. Juvalta in his recent work *Il Vecchio e il Nuovo Problema della Morale*, together with historical and other explanatory comments which deal principally with Kant and with the relations of ethics to metaphysics, politics, and religion. Abstract Ethics is neither an applied science nor equivalent to the Art of Life. It is an ethics of law or obligation, not of end or of the details of casuistry, and it is as general in its scope as formal logic. The springs of conduct may, indeed, be under grace, and consist in the love of ends and in the desire to ensue them. But ends are empirical and variable, and no ethical theory based on end can give adequate expression to the fundamental moral fact of autonomous obligation. Abstract Ethics must be under the law, and under a law which is not at all empirical but *a priori*; and the author not only accepts this fact as his ultimate moral datum, but tries to show its harmony with what we know otherwise concerning our minds and the world we live in. Moral obligation has for its sole object the two ultimate laws of freedom and justice. To ensure these is to ensure the condition of the attainment of any individual ends on the part of any moral subjects; and, consequently, every moral being ought to accept them as binding just because of their eternal and immutable rationality. The application of them may not be capable of rigorous precision; they are too general for that. But their paramount importance in moral matters is not, therefore, to be disputed.

This summary of the argument is too condensed to be faithful to its original, but the book itself is so concise that any summary would have precisely the same defect. And the comments I should like to make are, perhaps, too fundamental to be just. Since ends are realised in a subject and vary with his nature and capacities they may be called empirical in a certain sense, but it does not follow that the critical evaluation of them is empirical, else every truth of fact would be wholly empirical. Again the author's defence of Abstract Ethics seems itself to rest upon an ultimate judgment of worth. *Liberum esse hominem necesse est : vivere non est necesse*, like the similar motto of the free port of Hamburg, is a splendid maxim. But what, on this system, is the *rationale* of the right to liberty except the contention that only the freeman can pursue ends of value, and that the primary and universal moral duty is therefore to make the life of a freeman possible? The argument on pp. 95-96 is perhaps sufficient to refute the obvious rejoinder that part of the basis of this theory must be the empirical matter of fact that the life of a freeman makes ends attainable, but why should there be a universal duty of securing the *instrument* of the attainment of ends unless for the ultimate ethical reason that ends in conduct have intrinsic worth? Finally it should be noted that the author's theory does not really imply so exact an analogy between Abstract Ethics and formal logic as he appears to think. Logic certainly should not masquerade as an encyclopædia of the sciences, but a logician claims to be able to criticise, and to criticise finally, the validity of any proof presented to him, once the premisses are granted. But neither abstract nor concrete ethics can criticise conduct with the same finality or precision, even when the case is fully stated.

JOHN LAIRD.

An Introduction to Ethics. By G. A. JOHNSTON, M.A. Macmillan & Co., 1915. Pp. x, 254.

This book is "designed primarily for students in Training Colleges". It is divided into two parts. Pt. I., 'The Groundwork of Character,' is psychological, and deals in an interesting and straightforward manner with the influence of heredity and environment, the part played by instinctive behaviour and the emotions in the development of purposive action and fixed interests. The relation of the emotions to sentiments and the importance of the latter in the growth of the moral self is worked out very clearly and in accordance with recent psychological theories. The social nature of the self is strongly emphasised as is required by the author's view of the good for man; *viz.*, "the good for man consists in the development of a strong character in the activities of a socially valuable position in the community" (p. 6). The concluding chapter of Pt. I. deals with Will and Conscience "which must not be regarded as separate faculties and powers . . . 'Will' and 'Conscience' are simply names which are given to certain aspects of the one self which is present in all mental behaviour and all moral conduct" (p. 100).

Pt. II., 'The Realisation of Character in Vocation,' opens with chapters on the relation of character and conduct and the development of the moral judgment. The topics are closely related to those which immediately precede, and for this reason it might have been preferable to include them in Pt. I.

The significance of the moral judgment and the springs of moral conduct are discussed under the heading, 'The Motives and Sanctions of Conduct'. This leads up to an account of the place of duty and of pleasure in the moral life. In his preface the author writes: "The metaphysical foundation of Ethics has been kept strictly in the background. A metaphysical theory does underlie the general argument of these pages, but I have never obtruded it, because a metaphysic that could be stated in a book such as this would clarify nothing and might confuse much." Yet in the absence of some statement of metaphysical theory it seems doubtful whether a student can gain much from the three concluding chapters: 'Vocation,' 'Goodness and the Virtues,' 'The Institutions of the Moral Life'. The chapter on Vocation is disappointing. It is not unreasonable to expect it to give grounds for the definition of the good for man already quoted. From studying the chapter the student will be impressed with the paramount importance of 'Vocation' for the moral life, but he will not learn what precisely is meant thereby; nor will he be helped by the footnote of p. 199 which, while it repeats the declaration of the preface, tells him that it will be clear to any reader familiar with philosophical discussion that a Metaphysic of Ethics is implied. As it stands the chapter does not explain Vocation nor does it serve as a basis for, or verification of, the social significance of instinct claimed in Pt. I. and emphasised in the final chapter.

The book fulfils its purpose nevertheless, and meets a real need. It deserves to be adopted widely as a class text-book in Training Colleges. The clearness of style, skilful use of illustration, and the prominence given to the educational aspect of ethical topics will be appreciated by students. The value of the book is increased by the references for further reading given at the end of each chapter and by the carefully compiled index.

BEATRICE EDGEELL.

The Study of Religions. By STANLEY A. COOK, M.A. London : Adam and Charles Black, 1914. Pp. 439.

This is a volume of general reflections on the Study of Religions by an able specialist, widely known by his works on Semitic beliefs and customs. He has felt moved to put out a plea for the dispassionate and unbiased pursuit of such inquiries ; partly because of certain modern systems of research which are too mechanical and overbearing to promote real advance, partly because he finds that certain reformers of human life tend to ignore the point of view of those whom they desire to reform, and thus to encourage academic and specialist mental habits. In the Study of Religions, if anywhere, we want the "long view" and the "whole view" ; religions must be analysed and estimated as constituent parts of the entire life and thought of individuals and their environment. Never was there more need of this : the present may well be no less significant, as an era of psychical transition, than the sixth century B.C. or the beginning of the Christian era. In particular, we must learn how thought grows and moves, changes and keeps continuity ; only so can we distinguish the more transient elements of thinking from more fundamental processes and dispositions. In the end we may perhaps hope for a Universal Religion, or at least "something structural or skeletal, which would embrace the essential facts of man's psychical nature and the essential factors of development, and would give different levels an opportunity of progressing along their lines and of thus contributing to the welfare of all". Principles of this sort are applied, in the body of the book, to problems of large import, such as the Doctrine of Survivals in religion, the influence of environment, and the distinct yet allied impulses to move forward yet keep the treasures of past attainment.

The author owns frankly that the philosophic problems of which he treats lie outside his regular beat ; and it is undeniable that the reader is not seldom baffled by a certain opaqueness alike of argument and expression, and by a tendency to use words like "psychical" and "psychological" with a strange freedom and looseness. *Nouum prematur in aenum, membranis intus positus* is still a tolerably good maxim for the specialist who writes a book on a technical subject other than his own.

H. R. M.

Collected Essays of Rudolf Eucken. Edited and Translated by MEYRICK BOOTH. London : T. Fisher Unwin, 1914. Pp. 354.

The religious idealism of Prof. Eucken has been placed before the English-speaking public by a long series of translations of which the present is one of the more admirable examples. It can scarcely be said that this new collection of mixed essays will add much to our knowledge of his characteristically quasi-popular system of thought. Two or three of the now combined papers have appeared in philosophical reviews ; for instance, one on philosophy and the religious movement of to-day, or again an instructive and rewarding study of Kant's metaphors and similes. The last essay, on the reflection of the age in its concepts, brings us back to one of Eucken's earliest and best books, *Die Grundbegriffe der Gegenwart*, and is indeed translated from the second edition of that work. Another, on philosophical parties, is of special interest to the readers of this review. The rest, on such topics as the inner movement of modern life, the importance of great thinkers, popular education, and the status of religion in Germany, belong rather to that indeterminate sphere of "middle articles" in which information and broad flowing generalisations happily mix and mingle. One lays down a book like this with the feeling that Eucken is rather unlike the German philosophers we have been accustomed to read and admire. He is a modern equivalent of the

itinerant preachers of the ancient world, and like them he addresses a wide and eager audience. But one cannot quite bring oneself to call much that he writes philosophy. For that we go, among the living German thinkers, to Windelband, Rickert, Messer, and so forth; from whom we expect, and from whom we actually receive, exact and fruitful thought, of a kind that will bear re-reading. If any one is on the outlook for a really important philosophic work to translate, may we name to him Rickert's *Die Grenzen der naturwissenschaftlichen Begriffsbildung?* It would fill a blank in our literature, and it has long won the respect of those in the writer's own country who know good philosophy from bad.

H. R. M.

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 R. Dodge and F. G. Benedict, *Psychological Effects of Alcohol*, Carnegie Institution of Washington, 1915, pp. 281.
 C. F. D'Arcy, *God and Freedom in Human Experience*, London, Edward Arnold, 1915, pp. vi, 312.

VIII.—PHILOSOPHICAL PERIODICALS.

PSYCHOLOGICAL REVIEW. Vol. xxii., No. 5. **F. Watson.** ‘The Father of Modern Psychology.’ [Account of Vives, emphasising his work on association and emotion, and his practical tendencies.] **M. W. Loring.** ‘An Investigation of the Law of Eye-Movements.’ [There is a tendency to increase of torsion as the eye passes from the primary to successively more oblique positions. Torsion of the left eye tends to be to the left, and of the right eye to the right, from the point of view of the experimenter.] **A. T. Poffenberger, Jun.,** and **G. G. Tallman.** ‘Variability in Performance during Brief Periods of Work.’ [Four tests on two subjects show a decline of speed in the second 30 seconds; there was practically no practice-effect.] **R. Pintner.** ‘The Standardisation of Knox’s Cube Test.’ [Four cubes, laid out in line, are tapped in various orders with a fifth cube; test of some 850 normal children and 450 feeble-minded individuals; empirical standardisation.] **H. F. Adams.** ‘The Adequacy of the Laboratory Test in Advertising.’ [The laboratory tests by ‘order of merit’ are not a reliable guide to the business value of advertising.]—Vol. xxii., No. 6. **H. Woodrow.** ‘Reactions to the Cessation of Stimuli and their Nervous Mechanism.’ {Cessation-reactions to light and sound (two and three intensities respectively), under the instruction to react as quickly as possible, give sensibly the same times as normal reactions. The hypotheses of sensory latent time and synaptic resistance are inadequate; the cortical conditions of attention, and possibly determining tendencies, must be invoked.] **H. S. Langfeld.** ‘Facilitation and Inhibition of Motor Impulses: a Study in Simultaneous and Alternating Finger Movements.’ [The maximal simultaneous tapping-rate of the first and second fingers of the right hand is faster than that of the slower (and may be faster than that of the faster) finger alone; sympathetic movement and (perhaps) increased peripheral stimulation are responsible. The fingers tapping step-wise do about one and a half times as much as a single finger; tapping in complete alternation, about half as much. The latter loss is due to the necessary inhibition of the previous reflex; the former involves problems of co-ordination which require further study.] **W. S. Hunter.** ‘Retinal Factors in Visual After-movement.’ [Visual after-movement must be interpreted (so far as the retina is concerned) in terms of a streaming phenomenon which passes across the retina in a direction opposite to the image of the objective movement.] **J. A. Harris.** ‘Experimental Data on Errors of Judgment in the Estimation of the Number of Objects in Moderately Large Samples, with Special Reference to Personal Equation.’ [Groups of 25, 50, 100 and 200 beans were estimated by three observers in twenty-eight sets of experiments, distributed over two years, and comprising a total of 15,200 estimates. The results are presented statistically. There is a slight but significant personal equation (tendency to lay out too large samples), approximately the same in the long run for all observers; there are distinct differences in steadiness of judgment.] **J. Peterson.** ‘Origin of Higher Orders of

Combination Tones. [There is no case in proof of the derivation of combinational tones from upper partials.] **W. Brown.** 'From the University of California Psychological Laboratory. XXIII. Practice in Grading and Identifying Shades of Grey.' [Practice does not increase accuracy of grading; the matching from memory of four greys shows a substantial improvement in the course of five hours' work.]

AMERICAN JOURNAL OF PSYCHOLOGY. Vol. xxvi, No. 3. **E. L. Woods.** 'An Experimental Analysis of the Process of Recognising.' [Experiments with visual, auditory, tactual and olfactory stimuli. Imagery grows less important as complete familiarisation proceeds; feeling and self-consciousness appear irregularly and are fortuitous. The essential feature of recognition is "an ongoing consciousness of activities, of pauses, of adjustments and shifts of attention".] **A. E. Tanner.** 'Certain Social Aspects of Invention.' [Emphasises, with special reference to Watt, the lack of correspondence between the social value of an invention and the inventor's ability; the likeness of inventors' motives; and the differences in their training and methods.] **S. Kanda.** 'Geotropism in Animals.' [Discusses, in a popular way, the part played by gravity as stimulus throughout the world of life.] **E. G. Martin, B. D. Paul and E. S. Welles.** 'A Comparison of Reflex Thresholds with Sensory Thresholds: The Relation of this Comparison to the Problem of Attention.' [The reflex thresholds are the less variable. The two thresholds, however, tend to rise or fall together. Attention thus seems to be a function of the state of the higher brain centres, and the sensory threshold to be an indicator of that state.] **G. S. Hall.** 'The Freudian Methods applied to Anger.' [Hunger, fear and anger are as primary and independent as sex; and the Freudian mechanisms apply as well to anger as to sex.] **E. B. Titchener and H. P. Weld.** 'Minor Studies from the Psychological Laboratory of Cornell University.' **G. J. Rich.** 'xxiv. On the Variation with Temperature of the Pitch of Whistles and Variators.' [Gives formulæ for calibrating.] **J. S. Smith.** 'xxv. Visual Quality as a Determinant of Clearness.' [Hue, tint and chroma may all alike be effective to determine attention; their relative importance depends partly upon objective conditions, partly upon predisposition.] **J. D. Modell and G. J. Rich.** 'xxvi. A Preliminary Study of Vowel Qualities.' [Vocality appears with variator and whistle tones: the octave-relation can be made out for *u-o, o-a* and *e-i*, but hardly for *a-e*.] **C. A. Ruckmich.** 'A Bibliography of Rhythm.' [First supplementary list.] Book Reviews. Book Notes. Necrology. [S. Witasek and E. Meumann.]—Vol. xxvi., No. 4. **K. M. Dallenbach.** 'The History and Derivation of the word "Function" as a Systematic Term in Psychology.' [Shows that the term comes into English psychological use by way of phrenology.] **E. G. Boring.** 'The Thermal Sensitivity of the Stomach.' [Sensations of warmth are produced stomachically by stimuli of about 40° C., of cold by stimuli of about 30° C. These sensations are set up either in the stomach itself, or in tissues nearer to the stomach than the abdominal wall and the oesophagus.] **M. W. Calkins.** 'The Self in Scientific Psychology.' [Reply to Curtis. After general remarks on method, the writer adduces evidence from Katzaroff, Michotte and Prüm, and Ach, to the disclosure of the self in introspection. This disclosure would be universal, were it not for the ubiquity of the self and for certain forms of bias in method.] **G. C. Myers.** 'Grasping, Reaching and Handling.' [Report of a boy's motor activities during the first year of life.] **G. A. Feingold.** 'The Influence of Suggestion on Imagination.' [Experiments with ink-bLOTS. Suggestion reduces fertility of imagination, and

the more as it is more definitely particularised.] **G. S. Hall.** 'Thanatophobia and Immortality.' [Opens with a parallel between the psychologies of love and death (primitive fear of corpse ; tendency to decorate ; transfer from the dead person to accessories ; transfer from body to soul as from mate to child, etc.). Finds the genesis of ghosts in man's experiences of air. Ghosts are feared as suggesting the corpse, as evasive of sense, as unrestrained powers, as enforcers of justice. Immortality is nominal (wish to be remembered), influential (wish to affect survivors), plasmal (wish for posterity), or orthodox (wish for compensation in a future life). These four immortalities are variously interrelated, and their basal desires are complicated by motives from other sources : from scientific spiritualism, from Platonic idealism, from the entification of soul, and (in an inverse sense) from scientific evolutionism.] Book Reviews. Book Notes.

JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS. xii., 22. The most important thing in this number is a two-page letter of Bergson's to Prof. H. M. Kallen about his book on *William James and Henri Bergson*, in which he explains that his 'durée réelle' coincides with James's 'stream of consciousness,' and that though they had different origins there is no opposition between them. **R. S. Lillie.** 'What is Purposive and Intelligent Behaviour from the Physiological Point of View?' [To show that such behaviour is "characteristic of material systems with the peculiar constitution of living organisms". The criterion of intelligence is "recognising a situation as belonging to a definite kind".] **E. C. Parsons.** 'Circumventing Darwinism.' [No assurance of progress is to be got from Darwinism, but "some day we shall be content to be assured merely of the disastrous effects of inflexibility, of failing to meet whatever change takes place," and then "we shall stop clamouring for the assurance of progress as we have stopped clamouring for the promise of heaven".] xii., 23. **L. H. Miller.** 'The Religious Implications of Bergson's Philosophy regarding Intuition, and the Primacy of Spirit.' [Quotes a statement made orally by Bergson that "he thought intuition should always be tested by verification, regarding it as a valuable guide-board, but one that, like other guide-boards, might prove wrong". This is very important, because it plainly subjects the deliverances of 'intuition' to the pragmatic test. For the rest the writer's aim is to show that "Bergsonism is not only compatible with Christianity, but even favourable to it".] **A. A. Goldenweiser.** 'Spirit, Mana, and the Religious Thrill.' [Animism is not religion until 'the religious thrill supervenes'. This thrill is conceived as due to *mana*, impersonal magic power which underlies both magic and religion. The magical act, though initially only an expression in behaviour of certain desires and not as such religious, becomes associated with the religious thrill.] xii., 24. **G. Santayana.** 'German Philosophy and Politics.' [A review of Dewey's book with this title, which endorses its general attitude and adds a number of interesting suggestions. Thus it was from Spinoza that Hegel caught his scorn of the finite, but it was no longer with him "impartial, courteous and Oriental" but became "acid, arrogant, eager, hounded by the lust of life, and swollen with the claim to victory". It was "not pure scorn but mixed with annoyance". It is also pointed out that "'real' for Hegel, as for Plato, was a eulogistic term. The unreal existed also. The real had to swallow the unreal and digest it, so that this reality, this reason, was always hungry and sometimes dyspeptic." In opposition to absolutism Prof. Santayana thinks we should "practise courtesy

in the universe, exercising our will without vehemence or forced assurance, judging with serenity, and in everything discarding the word absolute as the most false and most odious of words".] **G. H. Sabine.** 'A New Monadology.' [A review of Varisco's *Know Thyself*, which he holds is an illogical attempt to give up the metaphysical without also discarding the epistemology of absolute idealism.] **C. E. Ferree** and **G. Rand.** 'A Résumé of Experiments on the Problem of Lighting in Its Relation to the Eye.' [It is found, e.g., that bad light affects the muscles not the retina of the eye, that strong contrasts are hurtful and that lampshades are better than eyeshades.] xii., 25. **M. M. Lowenthal.** 'Comparative Study of Spinoza and Neo-Realism as indicated in Holt's *Concept of Consciousness*, I. [Does not, so far, bring out any considerable resemblance.] **F. C. S. Schiller.** 'Are all Judgments "Practical"?' [Accepts Dewey's recognition of judgments with a distinctive 'practical' form referring to an is-to-be or something to-be-done (*cf.* xii., 20), and inquires further whether such reference may not be traced in all judgments in fact, though not in words. It is urged that every judgment which really occurs in a train of thought must be conceived logically as a *selection*, because there are conceivable alternatives to it, even when they were not psychologically thought of at the time. Hence it logically implies a selecting subject and his act of selection, and to abstract from this is a fiction which requires justification. Moreover, as the motive of the selection must always have been the supposed better value of the judgment preferred, a valuation is presupposed in judgment as such, and valuation is a practical attitude. All this holds as much of so-called 'theoretic' judgments as of those avowedly 'practical,' and the traditional doctrine rests merely on the substitution of the proposition for the judgment.] **A. T. Poffenberger.** 'Report on a Meeting of the New York Branch of the American Psychological Association.' xii., 26. **M. M. Lowenthal.** 'Comparative Study of Spinoza and Neo-Realism as indicated in Holt's *Concept of Consciousness*, II. [Concludes that "if the humanism of Spinoza and precision of Holt could be synthesised into a common philosophy, the structure would in a notable degree be consistent, inclusive and aesthetically admirable".] **E. C. Parsons.** 'A Communication in Regard to "The Discovery of Time".' [*Cf.* Shotwell's papers in xii., 8, 10, 12. Suggests that "adaptability rather than foreknowledge is the criterion of culture" and that primitive hunters need a calendar—of the habits of animals—as much as farmers.] xiii., 1. **H. C. Warren.** 'A Study of Purpose,' I. [Scientifically there are three problems: (1) the psychological analysis of purpose, (2) its biological history and meaning, and (3) its rôle in the universe. In this paper purpose is psychologically 'analysed'—into five 'fundamental factors': (1) the idea of some future situation or 'forethought,' (2) the 'assent,' (3) the feeling of 'potency,' (4) consciousness of self, (5) a feeling of 'fitness' or 'unfitness'. All are conceived intellectually, the 'sense of choice, volition or fiat' being explained away as "nothing more than assent reinforced by the feeling of personal dynamic efficiency," and it is declared that "no other mental data enter into the experience" of a purposive act.] xiii., 2. **H. C. Warren.** 'A Study of Purpose,' II. [The biological analysis of purposive behaviour need recognise only two of the five psychological factors, *viz.*, the 'anticipation' (= 'forethought'), and the 'fitness' of acts for the 'end' of prolonging life. But "the inversion of temporal order which marks purposive activity and growth" is to be explained mechanistically. "The assumption of an entelechy is both gratuitous and contrary to the general evidence."] Contains also a Report of a Committee on Standards for Graphic Presentation.

REVUE DE MÉTAPHYSIQUE ET DE MORALE. September, 1914 (Publié en Juin, 1915). **E. Boutroux.** 'Allocution au congrès de philosophie mathématique.' [M. Boutroux addressed the Congress in place of the late M. Poincaré. Philosophers have recently had to consider mathematics carefully, (a) because the traditional logic was insufficient to deal with mathematical reasoning; and (b) because the traditional epistemological alternatives—Innate Ideas, Critical Idealism, and Empiricism—are insufficient to account for the existence and success of mathematics. And mathematicians are no longer satisfied to take such notions as negative numbers, infinity, measurement, etc., on trust, but ask what they really represent. The relations of science and philosophy are not merely external; all sciences are parts of philosophy. And the co-operation of scientists and philosophers will lead to mutual understanding and goodwill.] **L. Cahen.** 'Un Fragment inédit de Condorcet.' [Condorcet left a number of fragmentary elaborations of points in his *Tableau des Progrès de l'Esprit Humain*. In the ones here published he discusses the meanings of instinct, nature, and freedom in individuals and peoples.] **C. Bouglé.** 'Remarques sur le Polytélisme.' [Polytelism is the fact that the same means may subserve several different ends. In consequence of this fact men of very different ideals can collaborate in pursuing some object (e.g., the spread of education), though of course if the differences become too explicit and pronounced there will be schisms. Polytelism makes for the solidarity of a society whose members are at different stages of development, as is seen in the support accorded to the Church by pious peasants and conservative free-thinkers. Again people with different social ideals can support their country as the means to the realisation of *any* of them; and those with different theories of morals can agree on the lay teaching of what they admire in common.] **D. Roustan.** 'La Science comme Instrument vital.' [Biological adaption in animals is a change of body to fit the surroundings; in men a change of surroundings to suit the body. Science is clearly a most important instrument in effecting such changes. This does not prove that it should confine itself to giving practical receipts; Greek applied science broke down when the Greek mind attended too closely to practical ends. Nor does it imply that science consists of convenient fictions. Poincaré only uses 'convenient' for true, when a proposition is very probable but not demonstrable *a priori*. Nietzsche, who held to the notion of absolute truth, failed in his attempt to show that error alone is biologically useful. He failed to see that what has been indispensable may be succeeded by what is still more useful, because truer; and he erred as to the meaning of the Law of Identity. Pragmatism, which rejects the notion of absolute truth, started with theological motives and only used biological considerations as a subsequent support. It is right in recognising the importance of trial and error in science, but fails to give a satisfactory account of how a trial is successful or an hypothesis is verified. To explain this we must assume a reality independent of our wills.] **A. Lalande.** 'L'Oeuvre de Louis Couturat.' [An excellent account of the work and main interests of this truly great man who resembled in so many respects Leibniz, the philosopher on whose system he shed so much light. A bibliography is appended.] **G. Belot.** 'La Guerre et la Démocratie.' [Democracies from their nature are not well fitted to prepare for or to wage war. But this is on the whole to their credit. And no state has yet had a democratic diplomacy. This renders it doubtful how far a democracy ought to or will keep promises made without its knowledge to other countries by its ministers. The fact that social legislation is on the whole less advanced among the Entente Powers than among the Central Powers does not prove that the former are not

fighting for democracy which is a general ideal rather than any special set of institutions. The ideal is that of Law and Right as against Force ; and it remains valid even if Force wins. The democratic powers must aim at a federation of equal sovereign states, not at the hegemony of one over all.] New Books, Periodicals, etc.

ARCHIV F. D. GESAMTE PSYCHOLOGIE. Bd. xxxiv., Heft 3 und 4. **W. Conrad.** 'Einstellung und Arbeit-wechsel als pädagogische und allgemein-psychologische Probleme.' [Seeks to establish and to quantify, by experimental means, the difference between concentration and readiness, the type of the *servant* and the type of the officer. The study of connected and of variously disconnected texts is interrupted by problems in addition. It turns out, unexpectedly, that the addition-times are longer after study of the disconnected. This does not mean, however, that concentration is greater for disconnected work ; analysis of the quantitative results and the observers' reports indicate various sources of disturbance ; though the author is led to look more favourably than at the outset upon change of work in the school. In conclusion, he sets up the psychomechanical concept of adjustment or attitude (*Einstellung*) as covering the effects of attention, association, etc., and outlines, somewhat vaguely, a physiological theory. The paper (nearly 200 pages) is both detailed and discursive.] **R. Peter.** 'Untersuchungen über die Beziehungen zwischen primären und sekundären Faktoren der Tiefenwahrnehmung.' [If two objects, at different distances from the eye, subtend different visual angles in monocular vision, and if all secondary criteria are ruled out, then the object which subtends the greater visual angle appears the nearer ; only at very close range does accommodation gain the upper hand. Changes of accommodation may themselves, under certain circumstances, play the part of an 'associative' factor.] **W. Wirth.** 'Waldemar Conrad.' [Necrology.]

"SCIENTIA" (RIVISTA DI SCIENZA). Vol. xviii. Part 1. June and July, 1915. **E. Rignano.** 'I fattori della guerra ed il problema della pace.' [A very thoughtful summary of the inquiry upon the war instituted by *Scientia*. This long article includes, besides the examination of the principal factors which have caused the war, a consideration of the question under what conditions and by what means the present war can preserve us from other wars—for a long time at least. 'Though we cannot say that this war will be the last, yet we can hope that war, in a more or less distant future, will disappear from the face of the earth, just as cannibalism, human sacrifices, massacres of whole populations, the condemnation of a whole people to slavery, and other such manifestations of the primitive social life, have once for all been abolished in the case of civilised nations.'] Book Reviews. Review of Reviews. French translations of the English and Italian articles. Vol. xviii. Part 2. August, 1915.—**G. Bohn.** 'Idées nouvelles sur l'adaptation et l'évolution. II^e Partie : Conception physico-chimique de l'évolution.' [In recent times, chemistry has revolutionised biology. We must see if the theory of evolution remains compatible with the laws of chemical equilibrium which hold for the activity of living beings. Each system of evolution (Lamarck, Darwin, De Vries, etc.) contains a part of the truth and many errors. We must take up again the study of the facts of evolution from the point of view of chemistry. Both Lamarck and Darwin are finalists.] **E. Carnevale.** 'Democrazia e giustizia penale. Parte II^a : Democrazia, garanzie processuali, e metodi della icta giudiziaria.' [The principles which are taken as guides in the present article are the same as in the author's previous article. The remarks made have in view the

future, to which scientific thought must also pay regard, and the formation of a theoretical and practical spirit which tries to better the institutions now in vogue.] **W. J. Ashley.** 'The Economic Conversion of England.' [In the time of a serious war, the control of the State over the economic activity of its citizens is widened and deepened. 'Of the force of these considerations England is to-day a conspicuous example. The State, in some cases instantly, in others after long deliberation, has enlarged its authority, has assumed duties and liabilities, has undertaken tasks, has restricted individual liberty, in quite new ways and on quite an enormous scale ; and hardly a voice is heard in protest.' The author gives a general survey of the economic measures of the English government since August 4th, 1914. 'The measures to be considered fall roughly into seven classes. England is dependent to a greater extent than any other country in the world upon external trade. Hence the vital necessity of (1) the machinery of credit and (2) the physical mechanism by which that trade is transacted. The action of the government was successful in restoring both these pre-requisites of trade ; but there could not but be some dislocation at first, and particular industries were bound to suffer by the closing of certain foreign markets and by the temporary changes in the spending habits of the people. Hence we have (3) a large group of measures of various sorts concerned with the general economic well-being of the people. Next, and of growing importance, have been the measures arising out of military necessities ; and these may be divided into (4) measures concerned with the transport of the army, (5) measures concerned with the production of war material, and (6) measures designed to hamper the enemy in his acquisition of necessary commodities. And finally, the effect of the war has been to link more closely together the several parts of the empire, and there has been (7) an important series of most significant measures in the self-governing Dominions and in the great dependency, India.] **Ch. Guignebert.** 'L'Église romaine dans le conflit européen.' [The logical result of the European war will be the beginning of a new era in universal life, and also the great revision of rights will have a decisive effect on the Roman Catholic Church. In an essay published in *Scientia* in 1911, the author predicted that Catholicism had come near to the death of immobility in a dogmatic formula. At the present time the Catholic Church is the Pope, and Benedict XV. has had the difficult task of pleasing everybody. He has consistently tried to be neutral : his view is that one ought to pray to God for peace without giving any hints to the Lord (*sans indiquer au Seigneur*) of the means to be used for this end. However, this attitude is both an error and an abdication. The Pope has neither satisfied the Allies nor their enemies. Some symptoms lead us to believe that the Vatican is evolving : the Pope is said to have been moved at Belgian atrocities, at the use of asphyxiating gases, and at the *Lusitania* affair ; and he is said to have asked the Kaiser to stop using gases. 'These are very good signs, and though it is said to be never too late to mend, it would be rather too late and too much of a good thing only to condemn such things after the victory of the Allies.' In a note added after the above article was written, the author refers to the notorious "interview Latapie," which does not, however, so says the author, convey any new information about the Pope's attitude, but only confirms the conclusions arrived at in the above article.] Critical Note. **F. Enriques.** 'Réflexions sur l'art d'écrire un traité à propos d'un traité de mathématiques.' [Concerned with Enriques' forthcoming *Lezioni sulla teoria geometrica delle equazioni e delle funzioni algebriche*.] Book Reviews. Review of Reviews. French translations of the Italian and English articles.

IX.—NOTES.

NOTE ON CONNOTATION AND DENOTATION.

LOGICIANS appear to me to be very confused as to what they mean by Connotation and Denotation. We are told that proper names have denotation but no connotation. Now logicians have wrangled a good deal about the second part of this statement, but no one seems to question the first part. Let us say then that the relation that the names *Mr. Asquith* and *Winston Churchill* have to the men Asquith and Churchill is that the names denote the terms.

We are further told by Mill that adjectives like *white* denote all white things, *e.g.* snow, writing-paper, etc., and that they connote the quality whiteness. This quality, he says, is denoted by the corresponding abstract noun, *viz. whiteness*. Now Mill fails to notice that *white* cannot denote snow or writing-paper in the same sense in which *Mr. Asquith* denotes the man Asquith or *whiteness* denotes the quality whiteness. To say that snow is white means that it has the quality of whiteness. But to say : This man is Asquith does not mean that he has the quality of 'Asquithness,' but merely that he has the quality of being called *Asquith*. In one sense then *N* denotes *N* means that *N* is the proper name of *N* and not a quality of it; in Mill's other sense it means that *N* is something that has the quality denoted by the abstract noun that corresponds to *N*. It is utterly misleading to use the same name—denotation—for these wholly different relations. Keeping to our original meaning of denotation we must clearly say that both *white* and *whiteness* denote the quality of being white.

We shall then need a special name for the relation between *white* or *whiteness* and particular white things. Let us call this relation *innovation*. Then the word *white* innotes any object which has the quality which it denotes. And the innovation of *white* is all white objects.

Next we come to connotation. According to Mill *white* connotes the quality which *whiteness* denotes. But we have now seen that *white* denotes this quality ; so at present we have no need for the word *connotation* at all. Is it needed anywhere ? We have not yet considered the case of common nouns. These are supposed to have both connotation and denotation. *Man* is supposed to denote Smith, Brown, etc., and to connote humanity. We clearly cannot allow that *man* denotes Smith, etc. We can, if we like, say that, in our sense of denoting, common nouns—or, at any rate, their plurals—denote classes. But they denote them as wholes ; they do not denote the separate members of the class. *Man* or *men* is not the proper name of Smith, though it is not unreasonable to call it the proper name of the class to which Smith and all other men belong. We can now accept Mill's meaning of connotation so long as we notice that it applies solely to common names. The connotation of *man* is the qualities which must be present in any member of the class which *man* denotes. But adjectives will have no connotation ; they denote the

connotations of common nouns. Thus *human* or *humanity* has no connotation, but it denotes what *man* connotes. Another confusion is often made here. It is often thought that if a quality be analysable the simple constituents are the connotation of the name of the quality. Thus it would be quite usual to call rationality and animality the connotation of *human*. But the question whether a quality be simple or complex has nothing to do with the connotation of its name. In no case can we reasonably say that the name of a quality has a connotation.

We may sum up as follows : (1) All categoric words have denotation. (2) Adjectives and the corresponding abstract nouns have the same denotation, *viz.* the quality of which they are the proper names. (3) The relation between an adjective and a substance which has the quality that the adjective denotes may be called *innovation*. Whatever we choose to call it, it is not denotation. (4) Adjectives and abstract nouns have no connotation whether the qualities which they denote be simple or complex. (5) Common nouns denote classes taken as wholes and not the members of these classes. They connote the qualities which all members of the class must have to be members of it. (6) In general we may say that an adjective *innotes* the members of the class which is denoted by the plural of the common noun whose connotation is the quality denoted by the adjective.

C. D. BROAD.

A meeting of the MIND Association will be held in the President's lodgings at Corpus Christi College, Oxford, on Monday, 15th May, at 4.30 P.M.

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